

**EMERGENCY RESPONSE REPORT**

**FOR**

**MORGAN'S POINT COLLISION**  
**HOUSTON SHIP CHANNEL**  
**MORGAN'S POINT, HARRIS COUNTY, TEXAS**

Prepared for

**U.S. Environmental Protection Agency Region 6**  
Will LaBombard, Project Officer  
1445 Ross Avenue  
Dallas, Texas 75202

Contract No. EP-W-06-042  
Technical Direction Document: 1/WESTON-042-15-009  
TDD No. TO-0001-42-15-09  
WESTON W.O. No. 20406.012.001.0935.01  
NRC No. 1110042  
FPN N/A  
CERCLIS ID N/A  
EPA OSC: Jhana Enders  
START-3 PTL: Patrick Bond

Submitted by

**Weston Solutions, Inc.**  
Cecilia H. Shappee, P.E., Program Manager  
5599 San Felipe, Suite 700  
Houston, Texas 77056  
(713) 985-6600

21 April 2015

## PROJECT SUMMARY

This final report describes the U.S. Environmental Protection Agency (EPA) response actions at the Morgan's Point Collision site located in the Houston Ship Channel between the City of Morgan's Point and the Atkinson Island Wildlife Management Area. The incident was under US Coast Guard (USCG) jurisdiction, and EPA was involved as a cooperating agency to provide assistance as needed. The detailed report follows this page, and all attachments are provided as separate portable document format (PDF) files.

On 09 May 2015, the EPA Region 6 Prevention and Response Branch (PRB) was notified of a spill of Methyl Tert-Butyl Ether (MTBE) that occurred in the Houston Ship Channel near the City of Morgan's Point that followed a collision involving two ships. The spill resulted from a breach in the hull of one of the ships resulting from the collision. The EPA Region 6 PRB activated the Superfund Technical Assessment and Response Team (START-3) contractor, Weston Solutions, Inc. (WESTON®), to mobilize to the incident site to perform a Tier 2 Response. Response objectives were to report to the Incident Command Center (ICC) for situational updates, analyze data that had been collected, document response activities, and conduct periodic air monitoring. After arriving on-site, START-3 documented response activities and conducted periodic air monitoring before demobilizing from the site on 12 March 2015.

Other agencies involved in the response included the Texas Commission on Environmental Quality (TCEQ), The Maersk Group (Potentially Responsible Party [PRP]), Gallagher Marine Systems (representative of the PRP), Center for Toxicology and Environmental Health (CTEH, PRP Contractor), T&T Salvage (Salvage Contractor), and The United States Army Corps of Engineers (USACE).

This final report was prepared to describe the technical scope of work that was completed as part of Technical Direction Document (TDD) 1/WESTON-042-15-009 for EPA Region 6. The EPA On-scene Coordinator (OSC) was Jhana Enders, and the START-3 Project Team Leader (PTL) was Patrick Bond.

☐

The EPA Task Monitor did not provide final approval of this report prior to the completion date of the work assignment. Therefore, Weston Solutions, Inc. has submitted this report absent the Task Monitor's approval.

☒

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EMERGENCY RESPONSE REPORT

PROJECT SUMMARY

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## **1. INTRODUCTION**

At approximately 1400 hours on 09 March 2015, the Environmental Protection Agency (EPA) Region 6 Prevention and Response Branch (PRB) was notified of a spill of MTBE that occurred in the Houston Ship Channel between the City of Morgan's Point, Texas and the Atkinson Island Wildlife Management Area. The spill was the result of the collision of two ships (the Carla Maersk and the Conti Peridot). At approximately 1500 hours on 09 March 2015, an EPA Team was activated with the primary tasks of obtaining situational updates from the Incident Command Center (ICC), documenting response activities, conducting periodic air monitoring in areas of potential contamination, and providing assistance to USCG as needed.

During the collision, port tanks three and four of the ship (Carla Maersk) containing MTBE were breached. The total reported capacity of these tanks was approximately 30,000 barrels, and 2,467 barrels were not accounted for. The spill occurred between the eastern tip of the City of Morgan's Point, Texas and the Atkinson Island Wildlife Management Area. Geographic coordinates of the spill were recorded using a Global Positioning System (GPS). The coordinates are Latitude 29.6790830° North and Longitude 94.9792470° West. A Site Location Map is included as Attachment A, a Site Area Map is included as Attachment B, and a Spill Pathway Map is included as Attachment C.

## **2. BACKGROUND**

At approximately 1240 hours on 09 March 2015, two ships, the Carla Maersk and Conti Peridot, collided, causing a breach in port tanks three and four of the Carla Maersk and a subsequent spill of MTBE, a fuel additive, into the Houston Ship Channel. The collision caused the channel to be shut down by the USCG from Light 86 to Morgan's Point. A shelter-in-place for the City of Morgan's Point was also put into effect by the USCG and the Port of Houston Authority as a precautionary measure. USCG established Unified Command (UC) at the incident location and response activities were directed by the USCG.

## **3. ACTIONS TAKEN**

Upon arrival to the incident location at 1719 hours on 09 March 2015, the EPA Team began to document site activities. At 1400 hours, CTEH (the PRP contractor) began air monitoring and

sampling areas of potential contamination. At 1825 hours, the USCG Gulf Strike Team began to inert the damaged tanks of the Carla Maersk with nitrogen to suppress the MTBE vapors. An air monitor aboard a Port of Houston fireboat circling the Maersk reported Volatile Organic Compound (VOC) readings of up to 22,000 parts per million (ppm) VOCs. Air monitors on deck and upwind of the ship reported a high of 35 ppm VOCs. At 1830 hours, CTEH reported one VOC detection recorded on the Fred Hartmann Bridge in addition to readings between 14 and 16 ppm VOCs along Bayridge Road that runs along the southern edge of Morgan's Point.

The EPA Team began air monitoring at approximately 2030 hours on 09 March 2015, and readings were below instrument detection levels except for one point where 10 ppm VOCs were detected. An odor consistent with that of MTBE was also present at this location. This information is presented on the Air Monitoring Location Map, which is included as Attachment D, and the Air Monitoring Results are included as Attachment E.

At 0700 hours on 10 March 2015, an aerial reconnaissance assessment revealed a sheen that was estimated to be 20 feet wide by 2 miles long coming from the Carla Maersk. CTEH continued air monitoring 24 hours a day at 50 readings per hour. Seven air sampling stations were established and operated 24 hours a day. At 1418 hours on 10 March 2015, the EPA team received current MTBE loss estimates from the Situation Unit. Per the loss estimates, the damaged tanks three and four contained approximately 30,000 barrels of MTBE, with 2,467 barrels of this 30,000 not accounted for. The 2,467 barrels were considered to be the maximum amount that could have been spilled into the channel.

At 1536 hours, T&T Salvage moved a barge in place and prepared to locate and remove the anchor of the Conti Peridot from the ship channel. CTEH reported no on-shore VOC air detections between 0000 hours and 1707 hours on 10 March 2015, but T&T and USACE did report an odor and readings of 0.2 ppm VOCs when directly downwind from the Maersk.

The EPA Team conducted air monitoring again on 11 March 2015 at approximately 0900 hours. This air monitoring was conducted south of the collision site as the wind was blowing toward the site. Five points were monitored and recorded, but all were below instrument detection levels. At 1400 hours that day, the EPA Team monitored one additional point and one point that had been monitored earlier that day; these two results were below instrument detection levels. The

Regional Response Team (RRT) approved the application of ARTIC 1X3ATC (AFFF) foam on March 10, 2015. A situational update was given at 1206 hours on 11 March 2015, reporting that the Coast Guard Gulf Strike Team was applying foam to the inside of the damaged tanks with Solberg Aqueous Film-Forming Foam (AFFF) 1X3; air monitoring during these operations had not yielded any detections for VOCs; and the sheen from the Carla Maersk had shrunk to approximately 1 mile long and 20 feet wide. It was also reported that CTEH monitored the shoreline from Beach City to Shore Acres and an over-the-top transfer to move remaining MTBE from the damaged tanks into the undamaged tanks had occurred. Updated VOC readings at the site of the foaming application were 7 ppm outside of the breached hull and below instrument detection levels on deck of the Carla Maersk.

As of 0615 hours on 12 March 2015, no VOC readings were recorded above detection limits by the EPA team or CTEH. The over-the-top transfer of MTBE was completed at 0230 hours on 12 March 2015, and at 0743 hours three tug boats began moving the Carla Maersk toward Barbour's Cut Turning Basin and arrived at Barbour's Cut at 0873 hours. After this movement began, the EPA team performed a final round of air monitoring. During this air monitoring session, six additional points were recorded near the area where the Carla Maersk was moved in addition to another recording at the point where 10 ppm VOCs was detected previously. All of these recordings were also below instrument detection levels.

At 1200 hours, the safety zone was re-established around the Carla Maersk in Barbour's Cut Turning Basin, and the Ship Channel was reopened for traffic. CTEH continued air monitoring in the terminal where the Carla Maersk was relocated and placed three fixed AreaRaes around the terminal. No detectable levels of VOCs around either side of the Carla Maersk were recorded, and the VOC levels inside the damaged tanks were 148 ppm VOCs, which was down from a previous reading of 208 ppm VOCs. As of 1410 hours there was no visible sheen coming from the Carla Maersk. During transit, CTEH reported readings of up to 10.4 ppm VOCs along the southern shore of Barbour's Cut.

Following review of response activity documentation, at 1720 hours on 12 March 2015, EPA OSC Enders instructed the EPA Team to demobilize from the site. USCG and all other involved

agencies remained on-site to finish removal and salvage operations, and CTEH remained on-site to continue air monitoring until all operations were complete.

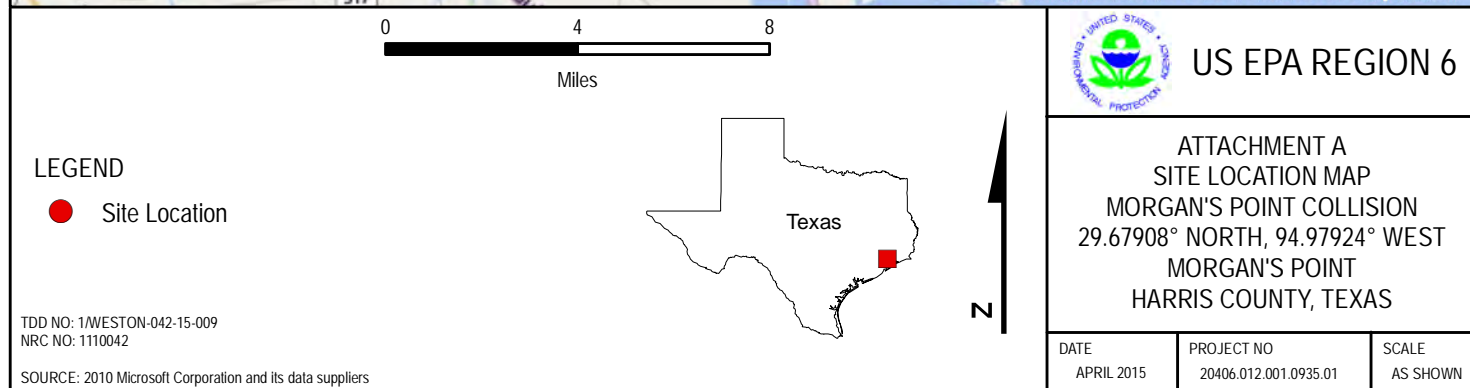
This report was prepared as part of the requirements of Technical Direction Document (TDD) No. 1/WESTON-042-15-009 (Attachment L) and serves as documentation of work completed to date.

#### **4. LIST OF ATTACHMENTS**

- A. Site Location Map
- B. Site Area Map
- C. Spill Pathway Map
- D. Air Monitoring Location Map
- E. Air Monitoring Results
- F. NRC Report No. 1110042
- G. Site Logbook
- H. Digital Photographs
- I. Pollution Report (POLREP)
- J. Methyl Tert-Butyl Ether MSDS
- K. ARTIC 1X3ATC Foam (AFFF) MSDS
- L. TDD No. 1/WESTON-042-15-009



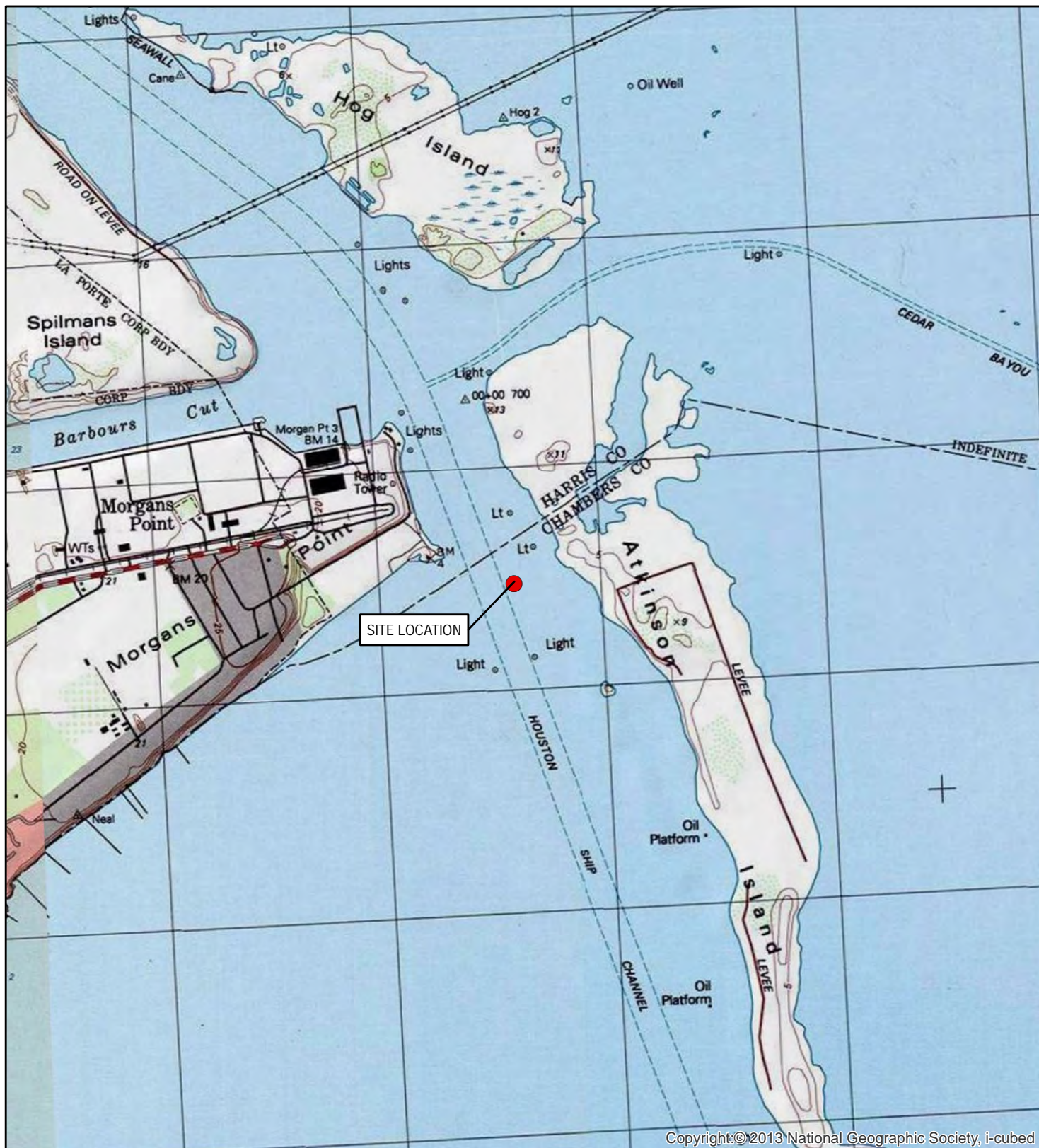
**ATTACHMENT A**  
**SITE LOCATION MAP**



**ATTACHMENT B**

**SITE AREA MAP**





0 2,000 4,000  
Feet

#### LEGEND

● Site Location



US EPA REGION 6

ATTACHMENT B  
SITE AREA MAP  
MORGAN'S POINT COLLISION  
29.67908° NORTH, 94.97924° WEST  
MORGAN'S POINT  
HARRIS COUNTY, TEXAS

DATE  
APRIL 2015

PROJECT NO  
20406.012.001.0935.01

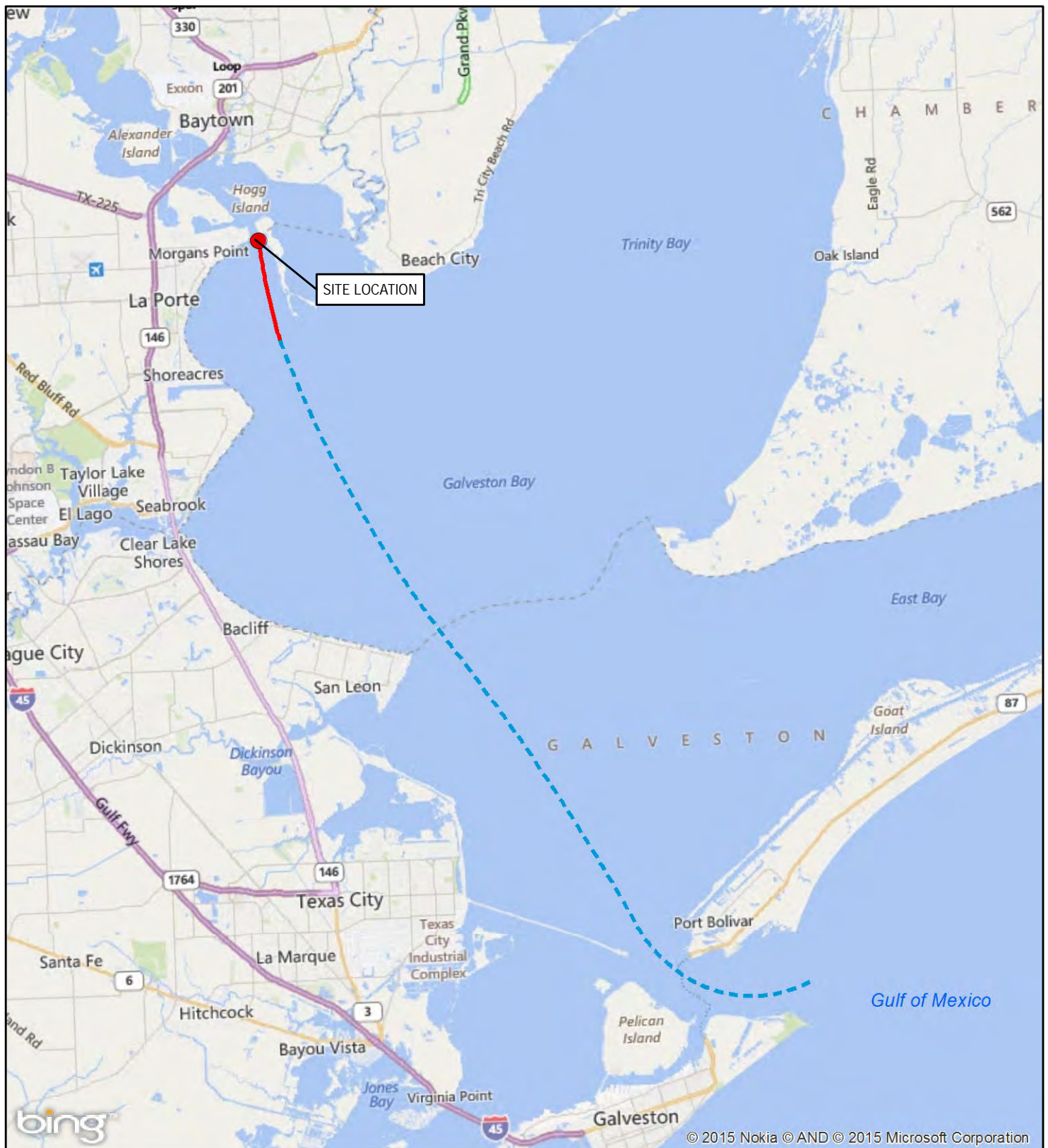
SCALE  
AS SHOWN

TDD NO: 1/WESTON-042-15-009  
NRC NO: 1110042

SOURCE: 2010 Microsoft Corporation and its data suppliers

**ATTACHMENT C**  
**SPILL PATHWAY MAP**





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## LEGEND

- Site Location
- Approximate 3-Mile Sheen Path  
(Witnessed During Overflight Reconnaissance)
- - - Potential Flow Path

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NRC NO: 1110042

SOURCE: 2010 Microsoft Corporation and its data suppliers



US EPA REGION 6

ATTACHMENT C  
SPILL PATHWAY MAP  
MORGAN'S POINT COLLISION  
29.67908° NORTH, 94.97924° WEST  
MORGAN'S POINT  
HARRIS COUNTY, TEXAS

DATE APRIL 2015	PROJECT NO 20406.012.001.0935.01	SCALE AS SHOWN
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**ATTACHMENT D**

**AIR MONITORING LOCATION MAP**





**LEGEND**

- Air Monitoring Locations
- Incident Location

0 1.25 2.5  
Miles

US EPA REGION 6

ATTACHMENT D  
AIR MONITORING MAP  
MORGAN'S POINT COLLISION  
29.67908° NORTH, 94.97924° WEST  
MORGAN'S POINT  
HARRIS COUNTY, TEXAS

DATE APRIL, 2015	PROJECT NO 20406.012.001.0935.01	SCALE AS SHOWN
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TDD NO: 1\WESTON-042-15-009  
NRC NO: 1110042

SOURCE: 2010 Microsoft Corporation and its data suppliers



**ATTACHMENT E**  
**AIR MONITORING RESULTS**

**Air Monitoring Results**  
**Morgan's Point Collision**  
**Morgan's Point, Harris County, Texas**

Point Name	Coordinates	Date	Time	VOCs (ppm)
Point 1	29.71623 N -94.99668 W	3/9/2015	2050	0
Point 2	29.71047 N -94.98259 W	3/9/2015	2056	0
Point 3	29.70369 N -94.98259 W	3/9/2015	2100	0
Point 4	29.70549 N -94.96042 W	3/9/2015	2103	0
Point 5	29.69927 N -94.94569 W	3/9/2015	2109	0
Point 6	29.71037 N -94.99573 W	3/9/2015	2122	10
Point 6 (2 <sup>nd</sup> round)	29.71037 N -94.99573 W	3/12/2015	915	0
Point 7	29.67872 N -94.98253 W	3/9/2015	2147	0
Point 8	29.66586 N -95.04262 W	3/11/2015	944	0
Point 9	29.51131 N -94.97665 W	3/11/2015	1002	0
Point 10	29.34892 N -95.01829 W	3/11/2015	1019	0
Point 11	29.60651 N -94.99561 W	3/11/2015	1043	0
Point 12	29.61839 N -95.00222 W	3/11/2015	1110	0
Point 12 (2 <sup>nd</sup> round)	29.61839 N -95.00222 W	3/11/2015	1445	0
Point 13	29.60837 N -94.99333 W	3/11/2015	1415	0
Point 14	29.67327 N -95.01630 W	3/12/2015	932	0
Point 15	29.67337 N -95.01118 W	3/12/2015	934	0
Point 16	29.67347 N -95.00647 W	3/12/2015	939	0
Point 17	29.67536 N -95.00126 W	3/12/2015	943	0
Point 18	29.67759 N -94.99480 W	3/12/2015	945	0
Point 19	29.67751 N -94.98966 W	3/12/2015	947	0



**ATTACHMENT F**

**NRC REPORT NO. 1110042**

**NATIONAL RESPONSE CENTER - INCIDENT REPORT**  
**--- GOVERNMENT USE ONLY --- GOVERNMENT USE ONLY ---**  
**DO NOT RELEASE this information to the public without**  
**permission from the NATIONAL RESPONSE CENTER 1-800-424-8802**

**NRC Case Number 1110042**

**INCIDENT DESCRIPTION**

Report taken by: E5 POST  
Incident Type: VESSEL  
Incident Cause: OTHER  
Affected Area: HOUSTON SHIP CHANNEL

The incident occurred on 09-Mar-15 at 2015-03-09 14:05:44.000 local time.

Affected Medium: WATER

---

**REPORTING PARTY**

Name: JASON MADDOX  
Organization: GALLAGHER MARINE SYSTEMS  
Address: UNKNOWN  
NJ  
  
PRIMARY Phone: 6098575398  
Type of Organization: PRIVATE ENTERPRISE

---

**SUSPECTED RESPONSIBLE PARTY**

Name: JASON MADDOX  
Organization: MAERSK TANKERS  
Address: UNKNOWN  
XX  
  
PRIMARY Phone: 6098575398  
Type of Organization: PRIVATE ENTERPRISE

---

**INCIDENT LOCATION**

Address: MM: 89-90 County: HARRIS  
City: HOUSTON State: TX Zipcode:

Location Description:  
HOUSTON SHIP CHANNEL

---

**RELEASED MATERIAL(S)**

CHRIS Code: NCC  
Official Material Name: NO CHRIS CODE  
Also Known As:  
Qty Released: 0 UNKNOWN AMOUNT  
Qty In Water: 0 UNKNOWN AMOUNT

---

### DESCRIPTION OF INCIDENT

CALLER STATED THAT TWO VESSELS COLLIDED RESULTING IN THE RELEASE OF AN UNKNOWN AMOUNT OF "MTBE UN2398" INTO THE WATER. THE CALLER STATED THAT THE A HOLE WAS CREATED IN THE TANKERS STARBOARD SIDE CARGO TANK.

---

### INCIDENT DETAILS

#### ---SHEEN INFORMATION---

Sheen Color:	UNKNOWN
Sheen Odor Description:	UNKNOWN
Sheen Travel Direction:	UNKNOWN
Sheen Size Length:	UNKNOWN
Sheen Size Width:	UNKNOWN

#### ---WATER INFORMATION---

Body of Water:	HOUSTON SHIP CHANNEL
Tributary of:	GULF OF MEXICO
Nearest River Mile Marker:	UNKNOWN
Water Supply Contaminated:	UNKNOWN

#### ---VESSEL INFORMATION---

Name:	T/V CARLA MAERSK	Number:	9171503
Aground:	N		
Flag:	DENMARK		
Length:		Breadth:	Draught:
Type:	TANKER		

Hull Construction:	
Fuel Capacity:	
Fuel On Board:	0 UNKNOWN AMOUNT
Cargo Capacity:	52736 CUBIC METER(S)
Cargo On Board:	0 UNKNOWN AMOUNT

---

### DAMAGES

Fire Involved: N    Fire Extinguished: U

#### INJURIES:

Hospitalized:
Empl/Crew:
Passenger:

#### FATALITIES:

Empl/Crew:
Passenger:
Occupant:

#### EVACUATIONS:

Who Evacuated:
Radius/Area:
Damages:

Length of      Direction

Closure Type	Description of Closure	Closure	of Closure
Air:	NO		
Road:	NO		
	Major Artery: NO		
Waterway:	NO		
Track:	NO		
Media Interest:		NONE	
Community Impact due to Material:			

---

#### REMEDIAL ACTIONS

CONTRACTORS HAVE BEEN NOTIFIED. THE VESSEL IS DROPPING ANCHOR.  
Release Secured: U  
Release Rate:  
Estimated Release Duration:

---

#### WEATHER

Weather: UNKNOWN  
Temp:  
Wind:

---

#### ADDITIONAL AGENCIES NOTIFIED

Federal:  
State/Local:  
State/Local On Scene:  
State Agency Number:

---

#### NOTIFICATIONS BY NRC

CENTERS FOR DISEASE CONTROL  
Person Notified:  
Response Phone: 7704887100

VESSEL RESPONSE PLAN PROGRAM  
Person Notified:  
Response Phone: 2023721229

DHS NOC  
Person Notified:  
Response Phone: 2022828114

CGIS HOUSTON  
Person Notified:  
Response Phone: 4096827808

CG INVESTIGATIVE SERVICE HQ  
Person Notified:  
Response Phone: 2024936607

DHS TEXAS FUSION CENTER  
Person Notified:

Response Phone: 2023068204

DOT CRISIS MANAGEMENT CENTER  
Person Notified:  
Response Phone: 2023661863

JFO-LA  
Person Notified:  
Response Phone: 2253366513

NATIONAL INFRASTRUCTURE COORD CTR  
Person Notified:  
Response Phone: 2022829201

NOAA RPTS FOR TX  
Person Notified:  
Response Phone: 2065264911

NATIONAL RESPONSE CENTER HQ  
Person Notified:  
Response Phone: 2022671136

PORT OF HOUSTON AUTH POLICE DEPT  
Person Notified:  
Response Phone: 7136703619

PORT OF HOUSTON AUTH POLICE DEPT  
Person Notified:  
Response Phone: 7136702642

REPORTING PARTY  
Person Notified:

SECTOR HOUSTON-GALVESTON  
Person Notified: RILEY  
Response Phone: 2814644855

TCEQ  
Person Notified:  
Response Phone: 5122392507

TCEQ  
Person Notified:  
Response Phone: 5122392507

DEPT OF ENERGY STPR  
Person Notified:  
Response Phone: 5047344113

TX DEPT OF STATE HEALTH SERVICES  
Person Notified:  
Response Phone: 5124587220

TX GENERAL LAND OFFICE  
Person Notified:  
Response Phone: 2814706597

TX GENERAL LAND OFFICE

Person Notified:

Response Phone: 2814706597

TEXAS STATE OPERATIONS CENTER

Person Notified:

Response Phone: 5124242208

USCG DISTRICT 8

Person Notified:

Response Phone: 5045896225

USCG DISTRICT 8

Person Notified:

Response Phone: 5046712080

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**ADDITIONAL INFORMATION**

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--- END NRC Case Number 1110042 ---  
Report any problems by calling 1-800-424-8802



**ATTACHMENT G**

**SITE LOGBOOK**



*Rite in the Rain.*  
ALL-WEATHER  
**JOURNAL**

Nº 391

Morgan's Point Collision  
Logbook 1 of 1

3/4/2015 - 3/12/2015

20406.012.001.0935.01

TDD: 0001-42-15-09

*Rite in the Rain*<sup>®</sup>  
ALL-WEATHER WRITING PAPER

Phone \_\_\_\_\_

Project Morgan's Point Collision  
WO#: 20406.012.001.0935.01  
TDD: 6001-42-15-09  
OSC Jhama Enders

**Clear Vinyl Protective Slipcovers (Item No. 30) are available for this style of notebook. Helps protect your notebook from wear & tear. Contact your dealer or the J. L. Darling Corporation**

[illegible]

2 3/9/2015

TDD: 0001-42-15-09  
20406.012.001.0935.01

Morgan's Point Collision

1446 START Patrick Bond (PB) and Corey Bercher are verbally tasked by OSC <sup>Primary</sup> ~~James~~ Enders to ~~Houston~~ mobilize to the Houston Ship Channel where two ships have collided and leaked methyl tert butyl ether (MTBE) into the water. START will report to incident command upon arrival and will report back to OSC Enders. Tasking for START to conduct air monitoring is probable. ————— CB

1609 START arrives at warehouse to gather necessary supplies for mobilization. ————— CB

Spoke to OSC Enders who provided command post location, 1415 E. Main La Porte, TX.

1643 START departs from Warehouse.

Weather: 66°F 96% humidity 9 mph

Winds SE. ————— CB

1719 START arrives at incident command to obtain situation update and report back to OSC Enders. ————— CB

2040 Begin air monitoring using MultiRae 23797.

Last calibration date was 3/4/2015.

Point 1 N 29.71623°W -94.99668° Oppm VOCs

Point 2 29.71047°N -94.98259°W Oppm VOCs

Point 3 29.70369°N -94.97198°W Oppm VOCs

Point 4 29.70549°N -94.96042°W Oppm VOCs

CBerch

TDD: 0001-42-15-09 20406.012.001.0935.01

3/9/2015 3

Morgan's Point Collision

Point 5 29.69927°N -94.94569°W Oppm VOCs

Point 6 29.71037°N -94.99573°W 10 Oppm VOCs

Point 7 29.67872°N -94.98253°W Oppm VOCs

LATE ENTRY: 1830 First Ops meeting is held and led by FOSC Capt. Brian Penoyer. Accurate estimations of amount of product lost are still pending. ~~Next~~ <sup>CB</sup> Penoyer tells us that

at 1825 a crew began to inert the tanks of concern that were damaged. A fire boat that was circling the damaged ship reported VOC concentrations of 22,000 ppm while on the most concentrated part of the plume. On deck:

and upwind of the ship, readings of 35 ppm were reported. Initial collision occurred at 1241.

This caused the ship channel to close from light 86 to Morgan's Point. <sup>CTEH</sup> ~~CTEH~~ <sup>CB</sup> mobilized

at 1400 to begin air monitoring. <sup>CTEH</sup> ~~CTEH~~ <sup>CB</sup> project

manager Charles Conley reported no detects in Sailors Cove neighborhood and only one detection on the Fred Hartmann bridge. Also reported VOC

readings of 14-16 ppm along Bridge road. Capt Penoyer and other ICS officers agree to 24 hour operations that will begin on May 10, 2015 at 0700.

Overnight low will be 55°F with winds out of the south. Rain should clear by midnight.

CBerch

Rain in the Rain.

4/3/9/15

TDD: 0001-42-15-09 20406.013.001.0935.01

# Morgan's Point Collision

Dense fog advisory remains until 0100 on 3/10/15.

Objectives for operations: 1. ensure public safety. Air monitoring will be used to ensure this. 2. Stop shift of plume. 3. determine if/where MTBE is on the surface of water and if it is collecting. 4. Protect natural resources from contamination. 5. Keep public informed of protective measures. 6. Begin assessment for salvage operations.

~~624~~ <sup>CB</sup> Denoyer notes that public announcement will be made after next round of air monitoring. Toxicologist Dr. Berg will arrive on scene ~19:30. Port anchor of Conti Peridot was lost in crash and must be found before <sup>channel</sup> port will reopen. Next tactics meeting will take place at 2000. ————— CB

0000 3/10/15 START leaves incident command for the night. ————— CB

~~0658 START PB + CB arrive at incident CB~~  
~~command and intend to report to next ops meeting~~  
~~at 0700. CB~~

Corey Bencher

C Bencher

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# Morgan's Point Collision

0658 START PB + CB arrive at incident command and intend to report to next ops meeting which is scheduled at 0700. — CB  
Temperature is currently 55°F. 94% humidity. NW winds of 8mph. Partly cloudy. Conducted health & safety meeting. Potential hazards include slips, trips, & falls. Wet roads will require extra driving caution. Chemical of Concern is still MTBE. Avoid inhalation and exposure to MTBE. Must be cautious of traffic when air monitoring.

0744 Salvage ops meeting occurs. Discuss future efforts to move the Conti Peridot to dock in order to remove steel cargo and lift bulbous bow to assess damages and ultimately move the ship out of the channel. Removing the lost anchor from the channel is also critical. When repairing the ship, full fire suppression hoses, <sup>CB</sup> foam Solberg AFFF Arctic 143 foam, and dry suppressants will be readily available in case fire erupts. Air monitoring will be established and in place by CTEH prior to beginning operation. Foam suppressant will be reapplied periodically to continuously suppress vapors and continue ops. Port of Houston fireboats will also be in water to assist in case of fire. ————— CB

C Bencher

file in the room

6/3/10/15

## Morgan's Point Collision

MTBE vapors and toxicity are the main risks and the goals are to reduce vapors and to minimize risk to the community, environment, and workers throughout the entire process. Inert gassing and vacuuming operations continue. First goal is to reduce vapors to allow further assessment. Second goal is to assess hull damage to determine if the ship is moveable and how to move it without releasing more MTBE. 37 ft draft is the concern. Do not want to take the ship to a working dock and are not sure of a close dock is that is deep enough to accommodate it. Will potentially move the ship to Barber's cut turning basin for temporary repairs. The inert gas being used is N.rogen. Aerial recon reports show a sheen coming off of the Carla Maersk 20 ft by 2 miles long. A press conference is scheduled for 1100. A unified command meeting is scheduled for 1130. A general meeting is scheduled for 1230. The Carla Maersk was carrying tanks of MTBE while the Conti Peridot was carrying steel cargo.

1158 Objectives meeting. Review incident Action Plan (IAP) and make revisions as necessary. Focus is on updating objectives.

CBench

3/10/15 7

## Morgan's Point Collision

1247 General Staff Meeting. CTEH is — CB

Currently continuing to air monitor and are taking Fifty readings per hour. Also have seven sampling stations set. Air Monitoring is planned for the removal of the Conti Peridot's anchor from the channel. This will be <sup>CB</sup> ~~performed~~ performed by T+T. They have also provided an egress plan. They will pick up an air monitor and CTEH employee to accompany them and ensure safety during the removal. A press conference is tentatively scheduled for 1100 on 3/11/2015. Marine Inspector along with LaPorte Fire department to get closer to the Carla Maersk later today for a better assessment. They plan to get better photos and videos. The Conti Peridot successfully moved past the Carla Maersk and is headed for a dock. Currently searching a decon facility for smaller vessels. Also need decon plan for small vessels. Helicopter Flight is ongoing for recon. After Vapor is controlled, will begin to assess next steps for Carla Maersk. Fly over is set for tomorrow at 0730 to check if any MTBE was released as a result of overnight salvage ops.

CBench

B. J. M. M. M.

8 3/10/15

TDD: 0001-42-15-09 20406.012.001.0935.01

1418

Morgan's Point Collision

~~0218~~<sup>CB</sup> Danica Jolly tells CB and PB most current MTBE estimates. Port tanks 3 and 4 contained ~30,000 barrels of product. OF Chest, 2,467 barrels are currently unaccounted for. — CB

1536 Objective coordination meeting begins. Conti Peridot has been motored out and is at a city dock. T+T has barge in place and is preparing to remove anchor from channel. This will potentially allow Unified Command to shrink the size of the restricted zone around the initial incident area. Environmental unit will lead shoreline crews to access water column impact by sampling SW. Will do 8-10 samples at three different depths. Planning meeting scheduled for 1700. — CB

1707 Sat<sup>CB</sup> Planning meeting begins. Safety zone remains the same size. Received product — CB trajectory path but needs to be revised to — CB estimate 2467 barrels. No VOC air detects since 0000 on 3/10. Peridot is located at city — CB dock 1. T+T & USACE detect an odor downwind of Maersk & get readings of 0.2 ppm VOC. — CB 2022 START leaves site for the night. — CB

C Berch

TDD: 0001-42-15-09 20406.012.001.0935.01

3/11/15

9

Morgan's Point Collision

0629 START arrives on site.

0700 Weather: high of 69°F, low of 59°F, 94% humidity, NNE winds of 8 MPH, cloudy skies. ~~CB~~<sup>CB</sup> — CB

0708 Health + Safety: slips, trips, falls, wet roads require extra driving ~~extra~~<sup>CB</sup> caution. Chemical of concern remains MTBE. Avoid inhalation or exposure. Be cautious of traffic when air monitoring. — CB

Corey Bercher C Berch — CB

Patrick Bond

~~Pat Bond~~ — CB

0857 START departs from Incident Command to air monitor to the south of the site.

Point 8 29.65536°N - 95.41260°W 496081<sup>496081</sup> 907792<sup>907792</sup> Oppm VOCs

Point 9 29.51131°N - 94.97665°W Oppm VOCs

Point 10 29.34892°N - 95.01329°W Oppm VOCs

Point 11 29.60659°N - 94.99561°W 1043 Oppm VOCs — CB

Point 12 29.61839°N - 95.00222°W 1110 Oppm VOCs — CB

1140 START arrives back at incident command.

1206 General Staff meeting. Salvage plan has been approved. Coast Guard - Gulf Strike team has been air monitoring during Fanning operations and has had not had a detection for VOCs yet. T+T and USACE is still looking to locate the

C Berch

Pat in the Rain

10 3/11/15 TDD:0001-42-15-09 20406.012.001.0935.01

### Morgan's Point Collision

anchor of the peridot. The sheen coming off of the Core/Maersk has shrunk to a length of 1.2 miles and 20 feet wide. CTEH is monitoring the air around the shores from Beach City to Shore Acres. Also, have 7 analytical stations running 24 hour samples. Also, water sampling the area in and around the safety zone. Foam application and over the top tank transfer is still in progress. Updated air monitoring readings for foam application site: 7ppm VOCs at work site, 0ppm on deck. ————— CB

1315 START leaves command post <sup>CB</sup> to gather additional photos and air monitor.

1344 START arrives at Ballester Fishing Area at the end of Morgan's Point to photograph foam application process — CB

Point 13 29.608371°N 94.993327°W 1415 0ppm VOCs

Point 12 (second round)

1445 0ppm VOCs

LATE ENTRY 3/10/15 0900 FOSC Brian Penoyer reported potential EPA assistance may be needed to review Haz Waste Disposal plans of MTBE/Salt Water mixtures that may have been captured. ————— CB

————— CBench —————

TDD:0001-42-15-09 20406.012.001.0935.01

3/11/15 11

### Morgan's Point Collision

LATE ENTRY 3/10/15 1019 FOSC Brian

Penoyer has requested RPT-6 support to support use of Aqueous Film Forming Foam (AFFF) to mitigate fumes of MTBE being emitted from damaged tanks. Approval was granted soon after. ————— CB

1605 Planning Meeting. Safe Zone remains constant. Chance of isolated thunder storms tonight. This may prevent aerial fly over. During foaming operation, some foam has leaked from ballast into water. VOC readings were 0 near the damaged area after foam application. The CTEH (Contractor for RP) continues sampling and monitoring as usual. 50 readings per hour with 7 air sampling stations running. USACE has determined that there is no obstruction near collision site and has deemed it safe for travel. ————— CB

1725 Transit Plan Meeting. Will attempt to move ship to OdFjell terminal once over the top pumping is complete. Unified command decides to begin pumping at 1900. Plan is to move Maersk to Flare and stop to check for damage or

————— CBench —————



12 3/11/15 TDD: 0001-42-15-09 20406.012.001.0935-01

Morgan's Point Collision  
chemical release. Plan is to open  
channel once Maersk is clear of  
BayPort Flare zone and there are  
no remaining VOC detections in the  
air. ————— CB

2115 Brief UC meeting discussing  
Transit plans that had changed. Revised  
plan is to stage Maersk in Barbours  
Cut Turning Basin in stead of OFJell  
dock. This plan will take place at first  
light assuming conditions support  
overall safety and port pilot supervision.

2230 START leaves site for the night.

2300 START arrives at warehouse to  
return ER vehicle and swap multikae  
23797 for multikae 23795. ————— CB

~~CBench~~

CBench

TDD: 0001-42-15-09 20406.012.001.0935-01 3/12/15 13

Morgan's Point Collision

0530 START arrives on site. Weather:

Thunderstorms currently ongoing and ~~off~~<sup>CB</sup>  
~~continue~~<sup>CB</sup> ~~it~~ are forecasted to continue  
until 1600. 55°F Winds 10 MPH N. 97%  
humidity. Health + Safety, Slips, trips, Falls.  
Wet roads require extra driving caution.  
Also must be mindful of lightning. Chemical  
of Concern is still MTBE, avoid exposure  
and inhalation. Fatigue is also a concern.  
Must be sure to stay rested especially  
when operating machinery. Also, watch for  
traffic when outside or air monitoring.

Corey Bencher CBench

Patrick Bond Pat Bond

0617 Situational Update regarding Transit.

Transit plan was drafted overnight. Over the  
top transfer was completed at 0430. No  
air monitoring hits have been detected. Channel  
pilots are on board Maersk, 3 tug boats are  
standing by. There were a number of  
vessels occupying Barbours Cut. They have  
been authorized to and have left the  
area. Ops Briefing begins. LAP objectives  
are unchanged. Demobilization and Light-Sizing  
plans were signed yesterday. Barge that

CBench

Pat Bond

14 3/12/15

TDD: 0001-42-15-09 20406.012.001.0935.01

## Morgans Point Collision

has been assisting in forming ops will depart before transit of Maersk. After the transit to Barbours Cut is complete, ship will enter a maintenance mode. Safety zone has decreased in size. Foam was reapplied overnight and will reapply based on air monitoring results. Pumps will be in place in case foam needs to be reapplied during transit. Waste management plan is pending. ——— CB

0743 Carla Maersk towing begins by the three tug boats. ——— CB

0837 Safety zone is removed and channel traffic resumes. ——— CB

0845 START departs from incident — CB Command (IC) to collect Air Monitoring data and check Carla Maersk's status.

0915 take 2nd round air reading at point 6  
Point 6 (2nd round) 0915 0 ppm VOCs

Point 14 29.67327°N -95.01630°W 0932 0 ppm VOCs

Point 15 29.67337°N -95.01118°W 0934 0 ppm VOCs

Point 16 29.67347°N -95.00647°W 0939 0 ppm VOCs

Point 17 29.67536°N -95.00126°W 0943 0 ppm VOCs

Point 18 29.67759°N -94.99480°W 0945 0 ppm VOCs

Point 19 29.67751°N -94.98966°W 0947 0 ppm VOCs

CB

C Berch

TDD: 0001-42-15-09 20406.012.001.0935.01

15

## Morgans Point Collision

3/12/15

1200 Command/General Staff meeting

Safety zone has reestablished around Carla Maersk in Barbours Cone Turning Cut. CTEH continues air monitoring and has two teams in terminal area. A wildlife management plan has been approved. No detections for VOCs along either side of Carla Maersk. Readings of 148 ppm VOC were recorded from inside damaged crack of ship. This has come down from 208 ppm. Discuss further methods of potential lightening and transit of ship. Also discuss need to establish final values to clean ship to.

1410 Tactics Meeting. No visible sheen occurring in Barbours Cut. Air monitoring results from CTEH showed VOCs up to 10.4 ppm along the <sup>CB</sup> shoreline southern shore line as the Carla Maersk was towed past. At the terminal where the Carla is currently located, 9200 feet of boom are on hand and ready to be placed in case of an additional release.

1605 Planning Meeting. Still no sheen in Barbours Cut Turning Basin from Carla ~~Maersk~~ <sup>CB</sup> Maersk. CTEH has two Air

C Berch

Ret on the Rain

3/12/15 Murgens Point Collision  
monitoring teams in Enterprise terminal  
where Cargill Maersk is located and  
two are mobile. Mobile air monitors  
plan to move deeper into the city in stead  
of remaining on the shore line. 3  
Fixed creelair monitors are placed around  
Enterprise terminal. CTEH plans to — CB  
continue water sampling tomorrow. — CB  
1630 OSC Enders instructs START to  
demo from site. — CB  
1720 START completes demo paperwork  
and departs from site. — CB  
1830 START arrives back at warehouse.  
End of log day. — CB

END OF  
LOGBOOK — CB



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*Rite in the Rain*



U.S. Department of Homeland Security  
United States Coast Guard



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## Sector Houston-Galveston

### Captain Brian Penoyer

Sector Commander  
and Captain of the Port

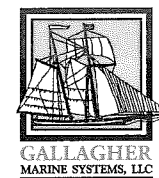
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## EPA RESPONSE MANAGER PHOTO REPORT

[SEARCH](#)

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DISPLAY



<b>Incident Name:</b>	Carla Maersk MTBE Spill
<b>Event Name:</b>	Morgan's Point Collision
<b>Photo Type:</b>	Recon Items
<b>Direction:</b>	N
<b>Photo Name:</b>	MorgPtColl_1.jpg
<b>Date and Time:</b>	Mar 9 2015 4:04PM
<b>Latitude:</b>	
<b>Longitude:</b>	
<b>Photographer:</b>	USCG
<b>Witness:</b>	USCG
<b>Caption:</b>	Carla Maersk is anchored after colliding with the Conti Peridot.

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Next



## EPA RESPONSE MANAGER PHOTO REPORT

[SEARCH](#)Enter Photo # 

**Incident Name:** Carla Maersk MTBE Spill  
**Event Name:** Morgan's Point Collision  
**Photo Type:** Recon Items  
**Direction:** NW  
**Photo Name:** MorgPtColl\_4.jpg  
**Date and Time:** Mar 9 2015 4:04PM  
**Latitude:**  
**Longitude:**  
**Photographer:** USCG  
**Witness:** USCG

**Caption:**  
Port view of the Carla Maersk and hull damage caused from collision with the Conti Peridot. The visible damage caused a spill of MTBE into the Houston Ship Channel.

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## EPA RESPONSE MANAGER PHOTO REPORT

[SEARCH](#)

Enter Photo #

DISPLAY



**Incident Name:** Carla Maersk MTBE Spill  
**Event Name:** Morgan's Point Collision  
**Photo Type:** Recon Items  
**Direction:** N  
**Photo Name:** MorgPtColl\_3.jpg  
**Date and Time:** Mar 9 2015 4:04PM  
**Latitude:**  
**Longitude:**  
**Photographer:** USCG  
**Witness:** USCG  
**Caption:**  
Port side of Carla Maersk and hull damage caused by collision.

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## EPA RESPONSE MANAGER PHOTO REPORT

[SEARCH](#)

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<b>Incident Name:</b>	Carla Maersk MTBE Spill
<b>Event Name:</b>	Morgan's Point Collision
<b>Photo Type:</b>	Recon Items
<b>Direction:</b>	NW
<b>Photo Name:</b>	MorgPtColl_5.jpg
<b>Date and Time:</b>	Mar 9 2015 4:07PM
<b>Latitude:</b>	
<b>Longitude:</b>	
<b>Photographer:</b>	USCG
<b>Witness:</b>	USCG
<b>Caption:</b>	

Port side of Carla Maersk and its rupture port tanks.

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## EPA RESPONSE MANAGER PHOTO REPORT

[SEARCH](#)

Enter Photo #

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<b>Incident Name:</b>	Carla Maersk MTBE Spill
<b>Event Name:</b>	Morgan's Point Collision
<b>Photo Type:</b>	Recon Items
<b>Direction:</b>	
<b>Photo Name:</b>	MorgPtColl_6.jpg
<b>Date and Time:</b>	Mar 9 2015 4:11PM
<b>Latitude:</b>	
<b>Longitude:</b>	
<b>Photographer:</b>	USCG
<b>Witness:</b>	USCG
<b>Caption:</b>	

Front view of the Conti Peridot after colliding with the Carla Maersk. Its port side anchor was lost after the collision.

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## EPA RESPONSE MANAGER PHOTO REPORT

[SEARCH](#)

Enter Photo #

DISPLAY



<b>Incident Name:</b>	Carla Maersk MTBE Spill
<b>Event Name:</b>	Morgan's Point Collision
<b>Photo Type:</b>	Recon Items
<b>Direction:</b>	N
<b>Photo Name:</b>	MorgPtColl_7.jpg
<b>Date and Time:</b>	Mar 12 2015 11:41AM
<b>Latitude:</b>	
<b>Longitude:</b>	
<b>Photographer:</b>	USCG
<b>Witness:</b>	USCG
<b>Caption:</b>	

Aerial photo of front of the Carla Maersk and a sheen coming from the vessel.

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## EPA RESPONSE MANAGER PHOTO REPORT

[SEARCH](#)

Enter Photo #

DISPLAY



**Incident Name:** Carla Maersk MTBE Spill  
**Event Name:** Morgan's Point Collision  
**Photo Type:** Recon Items  
**Direction:** SE  
**Photo Name:** MorgPtColl\_9.JPG  
**Date and Time:** Mar 12 2015 11:42AM  
**Latitude:**  
**Longitude:**  
**Photographer:** USCG  
**Witness:** USCG  
**Caption:**  
Starboard side of the Carla Maersk taken during foaming operations.

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**ATTACHMENT I**  
**POLLUTION REPORT (POLREP)**

U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
Morgan's Point Collision - Removal Polrep  
Initial Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region VI

**Subject:** POLREP #1  
Initial Response  
Morgan's Point Collision

Morgan's Point, TX  
Latitude: 29.6790830 Longitude: 94.9792470

**To:**  
**From:** Jhana Enders, OSC  
**Date:** 3/9/2015  
**Reporting Period:**

## 1. Introduction

### 1.1 Background

<b>Site Number:</b>	A6LA	<b>Contract Number:</b>	
<b>D.O. Number:</b>		<b>Action Memo Date:</b>	
<b>Response Authority:</b>	CERCLA	<b>Response Type:</b>	Emergency
<b>Response Lead:</b>	USCG	<b>Incident Category:</b>	
<b>NPL Status:</b>	Non NPL	<b>Operable Unit:</b>	
<b>Mobilization Date:</b>	3/9/2015	<b>Start Date:</b>	3/9/2015
<b>Demob Date:</b>		<b>Completion Date:</b>	
<b>CERCLIS ID:</b>		<b>RCRIS ID:</b>	
<b>ERNS No.:</b>		<b>State Notification:</b>	
<b>FPN#:</b>		<b>Reimbursable Account #:</b>	

#### 1.1.1 Incident Category

#### 1.1.2 Site Description

The site is located in the Houston ship channel. Two ships collided and Methyl Tert-Butyl Ether (MTBE) was released from a chemical tanker into the channel. The incident is in US Coast Guard Jurisdiction and EPA is providing assistance as needed.

##### 1.1.2.1 Location

The site is located in the Houston Ship Channel in the city of Morgan's Point. Coordinates of the collision are 29.679083 N -94.979247 W.

##### 1.1.2.2 Description of Threat

The primary threat is from the release of Methyl Tert-Butyl Ether (MTBE). MTBE is a volatile chemical lighter than water, heavier than air, and partially soluble in water. It is a flammable oxidizer. Its volatility can cause high levels of VOCs and LEL. Due to the volatility, cooler temperatures may affect its ability to dissolve in water and cause pooling. The pooling can potentially release harmful vapors.

## **2. Current Activities**

### **2.1 Operations Section**

#### **2.1.1 Narrative**

##### **9 March 2015**

On March 9, 2015, the EPA Team was mobilized to the city of Morgan's Point where two ships had collided in the Houston Ship Channel releasing MTBE. The ship containing the MTBE was the Carla Maersk. The other ship, the Conti Peridot, was carrying a load of steel. The collision caused the channel to shut down from light 86 to Morgan's Point. The EPA Team arrived onsite and began assessing site conditions and providing assistance to the US Coast Guard as needed. The Center for Toxicology and Environmental Health, L.L.C. (CTEH) was onsite and conducting air monitoring in the area. The EPA Team worked with CTEH to provide initial air monitoring for Volatile Organic Compounds (VOCs) and Lower Explosive Limit (LEL). Four areas were identified with elevated VOC readings; 1) Fred Hartman Bridge (9 ppm), 2) Entrance of Baytown Waterfront District (10 ppm), 3) North end of Bay Ridge Road (17.5 ppm) and 4) Port of Houston Fire Department (20 ppm). Inert gas (Nitrogen) is being pumped into the damaged tanks of the Carla Maersk to reduce the plume of MTBE.

### **2.2 Planning Section**

#### **2.2.1 Anticipated Activities**

Plan to locate and remove the anchor of the Conti Peridot due to safety concerns for the ship channel. Plan to apply AFFF foam suppressant to the damaged tank. Plan to repair Carla Maersk until it is able to be moved without releasing further product in the ocean. Once the ship can be moved, it will be taken to Barbour's Cut Turning Basin for more extensive repairs.

#### **2.2.2 Issues**

Issues locating the Conti Peridot anchor. Foam application must be approved by the RRT.

### **2.3 Logistics Section**

**Logistics Section Chief:**  
Tyson Obrien

### **2.4 Finance Section**

**Finance Section Chief:**  
Eva Pomaranski

### **2.5 Other Command Staff**

**2.5.1 Safety Officer**  
Dan Christenson

**2.5.2 Liaison Officer**

**2.5.3 Information Officer**  
Dustin Williams

## **3. Participating Entities**

### **3.1 Unified Command**

USCG



TCEQ  
City of La Porte  
Port of Houston  
RP (Maersk)

### **3.2 Cooperating Agencies**

USEPA  
USACE

#### **4. Personnel On Site**

No information available at this time.

#### **5. Definition of Terms**

(MTBE): Methyl Ter-Butyl Ether

#### **6. Additional sources of information**

No information available at this time.

#### **7. Situational Reference Materials**

No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
Morgan's Point Collision - Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region VI

**Subject:** POLREP #2  
03.10.15 to 03.12.15  
Morgan's Point Collision

Morgan's Point, TX  
Latitude: 29.6790830 Longitude: 94.9792470

**To:**  
**From:** Jhana Enders, OSC  
**Date:** 3/12/2015  
**Reporting Period:**

## 1. Introduction

### 1.1 Background

<b>Site Number:</b>	A6LA	<b>Contract Number:</b>	
<b>D.O. Number:</b>		<b>Action Memo Date:</b>	
<b>Response Authority:</b>	CERCLA	<b>Response Type:</b>	Emergency
<b>Response Lead:</b>	USCG	<b>Incident Category:</b>	
<b>NPL Status:</b>	Non NPL	<b>Operable Unit:</b>	
<b>Mobilization Date:</b>	3/9/2015	<b>Start Date:</b>	3/9/2015
<b>Demob Date:</b>	3/12/2015	<b>Completion Date:</b>	
<b>CERCLIS ID:</b>		<b>RCRIS ID:</b>	
<b>ERNS No.:</b>		<b>State Notification:</b>	
<b>FPN#:</b>		<b>Reimbursable Account #:</b>	

#### 1.1.1 Incident Category

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The primary threat is from the release of Methyl Tert-Butyl Ether (MTBE). MTBE is a volatile chemical lighter than water, heavier than air, and partially soluble in water. It is a flammable oxidizer. Its volatility can cause high levels of VOCs and LEL. Due to the volatility, cooler temperatures may affect its ability to dissolve in water and cause pooling. The pooling can potentially release harmful vapors.

## **2. Current Activities**

### **2.1 Operations Section**

#### **2.1.1 Narrative**

##### **12 March 2015**

Over the top transfer was completed at 0230 on 12 March 2015 and CTEH reported no VOC detections overnight. Foam was reapplied overnight and will continually be applied based on air monitoring results. Transit for the Carla Maersk began at 0743 hours and was complete at 0837 hours. The safety zone was moved around the Maersk in Barbour's Cut and channel traffic resumed. The EPA Team conducted air monitoring along the shoreline where the Carla Maersk was moved with no detections (refer to air monitoring map for locations). CTEH deployed two air monitoring teams to the terminal where the Maersk is being staged and reported no detections for VOCs during the transit progress. VOC readings inside the damaged crack of the ship have fallen from 208 ppm VOCs to 148 ppm VOCs and readings on the closest shoreline point to the Maersk are at 10.4 ppm VOCs. There is no visible sheen coming from the Carla Maersk in the terminal, but 9,200 feet of boom is on hand in case an additional release should occur. CTEH plans to air monitor near the city as opposed to the shoreline and have fixed area Rae monitors inside the terminal with the Maersk. CTEH plans to conduct water sampling on 13 March 2015.

##### **11 March 2015**

The EPA Team conducted air monitoring at 5 points to the south of the collision site with no detections. At 1200 hours, a general staff meeting occurred. The foaming process is ongoing and the Gulf Coast Strike Team has been conducting air monitoring with no detections for VOCs. T&T and USACE are still in the process of locating the anchor of the Conti Peridot. The sheen coming from the Carla Maersk has diminished to a length of 1.2 miles and a width of 20 feet wide. CTEH is air monitoring the shores from Beach City to Shore Acres and has 7 analytical stations collecting 24 hour air samples. Water sampling is being conducted in and around the safety zone near the foaming process. The over-the-top transfer is still in progress and updated VOC readings have been reported at a maximum of 7 ppm VOCs at the site of foaming applications and 0 ppm on the deck of the Carla Maersk. At 1345 hours, the EPA Team conducted air monitoring at 2 additional locations with no detects (refer to air monitoring map for locations). After foaming application was completed, CTEH air monitors near the foam application site reported readings of 0 ppm VOCs. T&T and USACE have determined there is no obstruction near the site of the collision and it is safe to travel. Transit plan is to stage the Carla Maersk in Barbour's Cut Turning Basin at sunrise on 12 March 2015 assuming overall safety and port pilot supervision.

##### **10 March 2015**

Inertion and vacuuming of the tanks is ongoing while the main priority continues to be the reduction of the MTBE plume and the safety of responders addressing the task. An additional objective includes the transportation of the Conti Peridot to dock and trying to locate its missing anchor. T&T and USACE are devising a plan to remove the anchor once it has been located. Aerial reports show a sheen of product 20 feet wide by 3 miles long trailing from the Carla Maersk, and surface water monitoring is being conducted in the area. Air monitoring by CTEH continues at a rate of 50 readings per hour and seven sampling stations have been set up. FOSC Brian Penoyer requested support for the use of Aqueous Film Forming Foam (AFFF). An RRT call was initiated and approval was granted for application of ARTIC 1X3ATC (AFFF). A marine inspector accompanied by the LaPorte Fire Department moved closer to the ship to better assess site conditions, and obtain photos and video. The Conti Peridot was successfully moved and docked at city dock 1. The anchor has still not been located. The total volume of the damaged tanks is 30,000 barrels with 2,467 barrels unaccounted for. The total amount released is still not known at this time.

### **2.2 Planning Section**

### **2.2.1 Anticipated Activities**

Plan to continue lightening and salvage of the Carla Maersk while avoiding further release of product.

### **2.2.2 Issues**

## **2.3 Logistics Section**

### **Logistics Section Chief:**

Tyson Obrien

## **2.4 Finance Section**

### **Finance Section Chief:**

Eva Pomaranski

## **2.5 Other Command Staff**

### **2.5.1 Safety Officer**

Dan Christenson

### **2.5.2 Liaison Officer**

### **2.5.3 Information Officer**

Dustin Williams

## **3. Participating Entities**

### **3.1 Unified Command**

USCG

TCEQ

City of La Porte

Port of Houston

PRP (Maersk)

### **3.2 Cooperating Agencies**

USEPA

USACE

## **4. Personnel On Site**

No information available at this time.

## **5. Definition of Terms**

(MTBE): Methyl Ter-Butyl Ether

## **6. Additional sources of information**

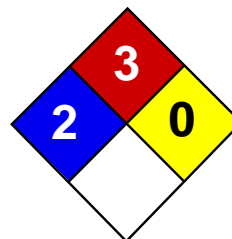
No information available at this time.

## **7. Situational Reference Materials**

No information available at this time.

**ATTACHMENT J**

**METHYL TERT-BUTYL ETHER MSDS**



Health	2
Fire	3
Reactivity	0
Personal Protection	H

## Material Safety Data Sheet

### Methyl tert-butyl ether MSDS

#### Section 1: Chemical Product and Company Identification

**Product Name:** Methyl tert-butyl ether

**Catalog Codes:** SLM2152

**CAS#:** 1634-04-4

**RTECS:** KN5250000

**TSCA:** TSCA 8(b) inventory: Methyl tert-butyl ether

**CI#:** Not available.

**Synonym:**

**Chemical Name:** Methyl tert-Butyl Ether

**Chemical Formula:** C<sub>5</sub>H<sub>12</sub>O

**Contact Information:**

**Sciencelab.com, Inc.**

14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: [ScienceLab.com](http://ScienceLab.com)

**CHEMTREC (24HR Emergency Telephone), call:**

1-800-424-9300

**International CHEMTREC, call:** 1-703-527-3887

**For non-emergency assistance, call:** 1-281-441-4400

#### Section 2: Composition and Information on Ingredients

**Composition:**

Name	CAS #	% by Weight
Methyl {tert-}butyl ether	1634-04-4	100

**Toxicological Data on Ingredients:** Methyl tert-butyl ether: ORAL (LD50): Acute: 4000 mg/kg [Rat]. 5960 mg/kg [Mouse]. VAPOR (LC50): Acute: 23576 ppm 4 hour(s) [Rat].

#### Section 3: Hazards Identification

**Potential Acute Health Effects:**

Extremely hazardous in case of eye contact (irritant), of ingestion. Very hazardous in case of skin contact (irritant), of inhalation. Hazardous in case of skin contact (permeator). Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

**Potential Chronic Health Effects:**

Extremely hazardous in case of eye contact (irritant), of ingestion. Very hazardous in case of skin contact (irritant), of inhalation. Hazardous in case of skin contact (permeator). CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to lungs, the nervous system, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged inhalation of vapors may lead to chronic respiratory irritation.

#### Section 4: First Aid Measures

**Eye Contact:**

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

**Skin Contact:**

After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

**Serious Skin Contact:**

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

**Inhalation:** Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

**Serious Inhalation:**

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

**Ingestion:**

Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

**Serious Ingestion:** Not available.

## Section 5: Fire and Explosion Data

**Flammability of the Product:** Flammable.

**Auto-Ignition Temperature:** 224°C (435.2°F)

**Flash Points:** CLOSED CUP: -28°C (-18.4°F).

**Flammable Limits:** LOWER: 2.5% UPPER: 15.1%

**Products of Combustion:** These products are carbon oxides (CO, CO<sub>2</sub>).

**Fire Hazards in Presence of Various Substances:** Flammable in presence of open flames and sparks.

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions:**

Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.

**Special Remarks on Fire Hazards:** Not available.

**Special Remarks on Explosion Hazards:** Not available.

## Section 6: Accidental Release Measures

**Small Spill:**

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

**Large Spill:**

Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources.

## Section 7: Handling and Storage

### Precautions:

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapour/spray. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.

### Storage:

Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. A refrigerated room would be preferable for materials with a flash point lower than 37.8°C (100°F).

## Section 8: Exposure Controls/Personal Protection

### Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

### Personal Protection:

Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

### Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** Not available.

## Section 9: Physical and Chemical Properties

**Physical state and appearance:** Liquid.

**Odor:** Characteristic. (Strong.)

**Taste:** Not available.

**Molecular Weight:** 88.15 g/mole

**Color:** Clear Colorless.

**pH (1% soln/water):** Not available.

**Boiling Point:** 55.2°C (131.4°F)

**Melting Point:** -109°C (-164.2°F)

**Critical Temperature:** Not available.

**Specific Gravity:** 0.7405 (Water = 1)

**Vapor Pressure:** 245 mm of Hg (@ 20°C)

**Vapor Density:** 3.1 (Air = 1)

**Volatility:** 100% (v/v).

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff.:** Not available.

**Ionicity (in Water):** Not available.

**Dispersion Properties:** See solubility in water, methanol, diethyl ether.

**Solubility:**



Soluble in methanol, diethyl ether. Partially soluble in cold water.

## Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Not available.

**Incompatibility with various substances:** Not available.

**Corrosivity:** Non-corrosive in presence of glass.

**Special Remarks on Reactivity:** Not available.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** No.

## Section 11: Toxicological Information

**Routes of Entry:** Dermal contact. Eye contact. Inhalation. Ingestion.

**Toxicity to Animals:**

WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 4000 mg/kg [Rat]. Acute toxicity of the vapor (LC50): 23576 ppm 4 hour(s) [Rat].

**Chronic Effects on Humans:** The substance is toxic to lungs, the nervous system, mucous membranes.

**Other Toxic Effects on Humans:**

Extremely hazardous in case of ingestion. Very hazardous in case of skin contact (irritant), of inhalation. Hazardous in case of skin contact (permeator).

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:** Not available.

**Special Remarks on other Toxic Effects on Humans:** Not available.

## Section 12: Ecological Information

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are more toxic.

**Special Remarks on the Products of Biodegradation:** Not available.

## Section 13: Disposal Considerations

**Waste Disposal:**

## Section 14: Transport Information

**DOT Classification:** Class 3: Flammable liquid.

**Identification:** : Methyl tert-butyl ether : UN2398 PG: II

**Special Provisions for Transport:** Not available.

## Section 15: Other Regulatory Information

### Federal and State Regulations:

Pennsylvania RTK: Methyl tert-butyl ether Massachusetts RTK: Methyl tert-butyl ether TSCA 8(b) inventory: Methyl tert-butyl ether SARA 313 toxic chemical notification and release reporting: Methyl tert-butyl ether CERCLA: Hazardous substances.: Methyl tert-butyl ether

**Other Regulations:** OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

### Other Classifications:

#### WHMIS (Canada):

CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

#### DSCL (EEC):

R11- Highly flammable. R38- Irritating to skin. R41- Risk of serious damage to eyes.

#### HMIS (U.S.A.):

**Health Hazard:** 2

**Fire Hazard:** 3

**Reactivity:** 0

**Personal Protection:** h

#### National Fire Protection Association (U.S.A.):

**Health:** 2

**Flammability:** 3

**Reactivity:** 0

**Specific hazard:**

#### Protective Equipment:

Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

## Section 16: Other Information

**References:** Not available.

**Other Special Considerations:** Not available.

**Created:** 10/10/2005 08:23 PM

**Last Updated:** 05/21/2013 12:00 PM

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.*

**ATTACHMENT K**

**ARTIC 1X3ATC FOAM (AFFF) MSDS**

# SAFETY DATA SHEET

Based upon Regulation (EC) No. 1907/2006, as amended by Regulation (EC) No. 453/2010

## ARCTIC 1X3ATC

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier:

Product name : ARCTIC 1X3ATC  
Registration number REACH : Not applicable (mixture)  
Product type REACH : Mixture

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against:

##### 1.2.1 Relevant identified uses

Fire extinguishing medium: concentrate

##### 1.2.2 Uses advised against

No uses advised against known

#### 1.3 Details of the supplier of the safety data sheet:

##### Supplier of the safety data sheet

SOLBERG SCANDINAVIAN AS - NORWAY  
Olsvollstranda  
NO-5938 Sæbøvågen  
Tel: +47 56 34 97 00  
Fax: +47 56 34 97 01  
Luc@solbergfoams.com

##### Manufacturer of the product

SOLBERG SCANDINAVIAN AS - NORWAY  
Olsvollstranda  
NO-5938 Sæbøvågen  
Tel: +47 56 34 97 00  
Fax: +47 56 34 97 01  
Luc@solbergfoams.com

The Solberg Company  
1520 Brookfield Avenue  
US-WI 54313 Green Bay - USA  
Tel: +1 920 593 94 45

Solberg Asia Pacific Pty Ltd  
3 Charles Street  
AU-NSW 2760 st. Marys - Australia  
Tel: +61 2 96 73 53 00

#### 1.4 Emergency telephone number:

24h/24h:  
+47 97 64 00 00 Europe, Middle East, Africa  
+1 920 593 94 45 AMERICAS  
+61 2 9430 63 96 ASIA-PASIFIC

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture:

##### 2.1.1 Classification according to Regulation EC No 1272/2008

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Eye Dam.	category 1	H318: Causes serious eye damage.

##### 2.1.2 Classification according to Directive 67/548/EEC-1999/45/EC

Classified as dangerous in accordance with the criteria of Directives 67/548/EEC and 1999/45/EC

# ARCTIC 1X3ATC

Xi; R36 - Irritating to eyes.

## 2.2 Label elements:

Labelling according to Regulation EC No 1272/2008 (CLP)



Signal word

Danger

H-statements

H318

Causes serious eye damage.

P-statements

P280

Wear eye protection/face protection.

P310

Immediately call a POISON CENTER or doctor/physician.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## 2.3 Other hazards:

CLP

Contains persistent organic fluorocomponent(s)

## SECTION 3: Composition/information on ingredients

### 3.1 Substances:

Not applicable

### 3.2 Mixtures:

Name (REACH Registration No)	CAS No EC No	Conc. (C)	Classification according to DSD/DPD	Classification according to CLP	Note	Remark
2-(2-butoxyethoxy)ethanol (01-2119475104-44)	112-34-5 203-961-6	C<20%	Xi; R36	Eye Irrit. 2; H319	(1)(2)(10)	
ethanediol (01-2119456816-28)	107-21-1 203-473-3	C<25%	Xn; R22	Acute Tox. 4; H302 STOT RE 2; H373	(1)(2)(10)	
sodium octyl sulphate (-)	142-31-4 205-535-5	C<3%	Xi; R38 - 41	Skin Irrit. 2; H315 Eye Dam. 1; H318	(1)	
sodium decyl sulphate (-)	142-87-0 205-568-5	C<3%	Xn; R22 Xi; R38 - 41	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318	(1)	
D-glucopyranose, oligomers, decyl octyl glycosides (-)	68515-73-1 500-220-1	C<3%	Xi; R41	Eye Dam. 1; H318	(1)	
sucrose (-)	57-50-1 200-334-9	C>1%			(2)	

(1) For R-phrases and H-statements in full: see heading 16

(2) Substance with a Community workplace exposure limit

(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

## SECTION 4: First aid measures

### 4.1 Description of first aid measures:

General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.

After eye contact:

Rinse immediately with plenty of water for 15 minutes. Take victim to an ophthalmologist.

After ingestion:

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Consult a doctor/medical service if you feel unwell.

### 4.2 Most important symptoms and effects, both acute and delayed:

Reason for revision: 2; 3

Publication date: 2012-04-04

Date of revision: 2012-10-30

Revision number: 0100

Product number: 51884

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# ARCTIC 1X3ATC

## 4.2.1 Acute symptoms

### After inhalation:

No effects known.

### After skin contact:

No effects known.

### After eye contact:

Inflammation/damage of the eye tissue. Corrosion of the eye tissue.

### After ingestion:

No effects known.

## 4.2.2 Delayed symptoms

No effects known.

## 4.3 Indication of any immediate medical attention and special treatment needed:

If applicable and available it will be listed below.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media:

#### 5.1.1 Suitable extinguishing media:

Adapt extinguishing media to the environment.

#### 5.1.2 Unsuitable extinguishing media:

No unsuitable extinguishing media known.

### 5.2 Special hazards arising from the substance or mixture:

Upon combustion: formation of CO, CO<sub>2</sub> and small quantities of nitrous vapours, hydrofluoric acid, sulphur oxides.

### 5.3 Advice for firefighters:

#### 5.3.1 Instructions:

No specific fire-fighting instructions required.

#### 5.3.2 Special protective equipment for fire-fighters:

Gloves. Safety glasses. Protective clothing. Heat/fire exposure: compressed air/oxygen apparatus.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures:

#### 6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

#### 6.1.2 Protective equipment for emergency responders

Gloves. Safety glasses. Protective clothing.

#### Suitable protective clothing

See heading 8.2

### 6.2 Environmental precautions:

Contain released substance, pump into suitable containers. Plug the leak, cut off the supply.

### 6.3 Methods and material for containment and cleaning up:

Take up liquid spill into inert absorbent material, e.g.: sand/earth. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

### 6.4 Reference to other sections:

See heading 13.

## SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 7.1 Precautions for safe handling:

Observe normal hygiene standards.

### 7.2 Conditions for safe storage, including any incompatibilities:

#### 7.2.1 Safe storage requirements:

Keep container in a well-ventilated place. Meet the legal requirements.

#### 7.2.2 Keep away from:

No data available.

#### 7.2.3 Suitable packaging material:

No data available



# ARCTIC 1X3ATC

## 7.2.4 Non suitable packaging material:

No data available

## 7.3 Specific end use(s):

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters:

#### 8.1.1 Occupational exposure

##### a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

#### The Netherlands

Ethaan-1,2-diol (damp)	Short time value	104 mg/m <sup>3</sup>	damp
	Short time value, calculated	40 ppm	damp
	Time-weighted average exposure limit 8 h	52 mg/m <sup>3</sup>	damp
	Time-weighted average exposure limit, calculated	20 ppm	damp
Ethaan-1,2-diol (druppels)	Time-weighted average exposure limit 8 h	10 mg/m <sup>3</sup>	druppels
	Time-weighted average exposure limit, calculated	3.9 ppm	druppels
2-(2-butoxyethoxy)ethanol	Short time value	100 mg/m <sup>3</sup>	
	Short time value, calculated	15 ppm	
	Time-weighted average exposure limit 8 h	50 mg/m <sup>3</sup>	
	Time-weighted average exposure limit, calculated	7.4 ppm	

#### EU

Ethylene glycol	Short time value	40 ppm 104 mg/m <sup>3</sup>	
	Time-weighted average exposure limit 8 h	20 ppm 52 mg/m <sup>3</sup>	
2-(2-Butoxyethoxy)ethanol	Short time value	15 ppm 101.2 mg/m <sup>3</sup>	
	Time-weighted average exposure limit 8 h	10 ppm 67.5 mg/m <sup>3</sup>	

#### Belgium

Ethylèneglycol (en aérosol)	Short time value	40 ppm (M) 104 mg/m <sup>3</sup> (M)	M: La mention "M" indique que lors d'une exposition supérieure à la valeur limite, des irritations apparaissent ou un danger d'intoxication aiguë existe. Le procédé de travail doit être conçu de telle façon que l'exposition ne dépasse jamais la valeur limite. Lors des mesurages, la période d'échantillonnage doit être aussi courte que possible afin de pouvoir effectuer des mesurages fiables. Le résultat des mesurages est calculé en fonction de la période d'échantillonnage.
	Time-weighted average exposure limit 8 h	20 ppm (M) 52 mg/m <sup>3</sup> (M)	M: La mention "M" indique que lors d'une exposition supérieure à la valeur limite, des irritations apparaissent ou un danger d'intoxication aiguë existe. Le procédé de travail doit être conçu de telle façon que l'exposition ne dépasse jamais la valeur limite. Lors des mesurages, la période d'échantillonnage doit être aussi courte que possible afin de pouvoir effectuer des mesurages fiables. Le résultat des mesurages est calculé en fonction de la période d'échantillonnage.
Saccharose	Short time value	- ppm - mg/m <sup>3</sup>	
	Time-weighted average exposure limit 8 h	- ppm 10 mg/m <sup>3</sup>	
2-(2-Butoxyéthoxy)éthanol	Short time value	15 ppm 101.2 mg/m <sup>3</sup>	

Reason for revision: 2; 3

Publication date: 2012-04-04

Date of revision: 2012-10-30

Revision number: 0100

Product number: 51884

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# ARCTIC 1X3ATC

2-(2-Butoxyéthoxy)éthanol	Time-weighted average exposure limit 8 h	10 ppm 67.5 mg/m³	
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## USA (TLV-ACGIH)

Ethylene glycol	Momentary value	100 mg/m³	
Sucrose	Time-weighted average exposure limit 8 h	10 mg/m³	

## Germany

2-(2-Butoxyéthoxy)ethanol	Time-weighted average exposure limit 8 h	10 ppm 67 mg/m³	
Ethandiol	Time-weighted average exposure limit 8 h	10 ppm 26 mg/m³	

## France

Ethylèneglycol (vapeur)	Short time value	40 ppm 104 mg/m³	
	Time-weighted average exposure limit 8 h	20 ppm 52 mg/m³	
Saccharose	Short time value	- ppm - mg/m³	
	Time-weighted average exposure limit 8 h	- ppm 10 mg/m³	
2-(2-Butoxyéthoxy)éthanol	Short time value	15 ppm 101.2 mg/m³	
	Time-weighted average exposure limit 8 h	10 ppm 67.5 mg/m³	

## UK

Sucrose	Short time value	20 mg/m³	
	Time-weighted average exposure limit 8 h	10 mg/m³	
2-(2-Butoxyéthoxy)ethanol	Short time value	15 ppm 101.2 mg/m³	
	Time-weighted average exposure limit 8 h	10 ppm 67.5 mg/m³	
Ethane-1,2-diol particulate	Short time value		
	Time-weighted average exposure limit 8 h	10 mg/m³	
Ethane-1,2-diol vapour	Short time value	40 ppm 104 mg/m³	
	Time-weighted average exposure limit 8 h	20 ppm 52 mg/m³	

## b) National biological limit values

If limit values are applicable and available these will be listed below.

### 8.1.2 Sampling methods

Product name	Test	Number
1,2-ethanediol	NIOSH	5500
Ethylene Glycol	NIOSH	5523

### 8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

### 8.1.4 DNEL/PNEC values

#### Workers

#### 2-(2-butoxyéthoxy)ethanol

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Acute local effects inhalation	14 ppm	
	Long-term systemic effects dermal	20 mg/kg bw/day	
	Long-term systemic effects inhalation	10 ppm	
	Long-term local effects inhalation	10 ppm	

#### ethanediol

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects dermal	106 mg/kg bw/day	
	Long-term local effects inhalation	35 mg/m³	

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# ARCTIC 1X3ATC

## D-glucopyranose, oligomers, decyl octyl glycosides

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects dermal	595000 mg/kg bw/day	
	Long-term systemic effects inhalation	420 mg/m <sup>3</sup>	

## General population

### 2-(2-butoxyethoxy)ethanol

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Acute local effects inhalation	7.5 mg/m <sup>3</sup>	
	Long-term systemic effects dermal	10 mg/kg bw/day	
	Long-term systemic effects inhalation	5 mg/kg bw/day	
	Long-term systemic effects oral	1.3 mg/kg bw/day	
	Long-term local effects inhalation	5 mg/m <sup>3</sup>	

### ethanediol

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects dermal	53 mg/kg bw/day	
	Long-term local effects inhalation	7 mg/m <sup>3</sup>	

## D-glucopyranose, oligomers, decyl octyl glycosides

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects dermal	357000 mg/kg bw/day	
	Long-term systemic effects inhalation	124 mg/m <sup>3</sup>	
	Long-term systemic effects oral	35.7 mg/kg bw/day	

## PNEC

### 2-(2-butoxyethoxy)ethanol

Compartment	Value	Remark
Fresh water	1 mg/l	
Marine water	0.1 mg/l	
Fresh water sediment	4.0 mg/kg dw	
Marine water sediment	0.4 mg/kg dw	
Soil	0.4 mg/kg dw	
STP	200 mg/l	

### ethanediol

Compartment	Value	Remark
Fresh water	10 mg/l	
Marine water	1 mg/l	
aqua (intermittent releases)	10 mg/l	
Fresh water sediment	20.9 mg/kg sediment dw	
Marine water sediment	1 mg/kg dw	
Soil	1.53 mg/kg soil dw	
STP	199.5 mg/l	

## **8.1.5 Control banding**

If applicable and available it will be listed below.

## **8.2 Exposure controls:**

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### **8.2.1 Appropriate engineering controls**

Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

### **8.2.2 Individual protection measures, such as personal protective equipment**

Observe normal hygiene standards. Do not eat, drink or smoke during work.

#### a) Respiratory protection:

Wear gas mask with filter type A if conc. in air > exposure limit.

#### b) Hand protection:

Gloves.

#### c) Eye protection:

Safety glasses.

#### d) Skin protection:

Protective clothing.

### **8.2.3 Environmental exposure controls:**

See headings 6.2, 6.3 and 13

## SECTION 9: Physical and chemical properties

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Product number: 51884

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# ARCTIC 1X3ATC

## 9.1 Information on basic physical and chemical properties:

Physical form	Liquid
Odour	No data available on odour
Odour threshold	No data available
Colour	No data available on colour
Particle size	Not applicable (liquid)
Explosion limits	No data available
Flammability	Non combustible
Log Kow	No data available
Dynamic viscosity	No data available
Kinematic viscosity	No data available
Melting point	No data available
Boiling point	No data available
Flash point	Not applicable
Evaporation rate	No data available
Vapour pressure	No data available
Relative vapour density	No data available
Solubility	water ; Complete
Relative density	1.04
Decomposition temperature	No data available
Auto-ignition temperature	No data available
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	No data available

### Physical hazards

No physical hazard class

## 9.2 Other information:

Absolute density	1040 kg/m <sup>3</sup>
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## SECTION 10: Stability and reactivity

### 10.1 Reactivity:

No data available.

### 10.2 Chemical stability:

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions:

No data available.

### 10.4 Conditions to avoid:

No data available.

### 10.5 Incompatible materials:

No data available.

### 10.6 Hazardous decomposition products:

Upon combustion: formation of CO, CO<sub>2</sub> and small quantities of nitrous vapours, hydrofluoric acid, sulphur oxides.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects:

#### 11.1.1 Test results

#### Acute toxicity

##### ARCTIC 1X3ATC

No (test) data on the mixture available

# ARCTIC 1X3ATC

## 2-(2-butoxyethoxy)ethanol

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
Oral	LD50	Equivalent to OECD 401	2410 mg/kg bw		Mouse	Male	Experimental value
Dermal	LD50	Equivalent to OECD 402	2764 mg/kg bw		Rabbit	Male	Experimental value
Inhalation	IRT (inhalation risk test)	BASF test	> 29 ppm	2 h	Rat		Experimental value

## ethanediol

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
Oral	LD50	BASF-internal standards	7712 mg/kg bw		Rat	Male/female	Experimental value
Dermal	LD50	Not further determined	3500 mg/kg bw		Mouse	Male/female	Experimental value
Inhalation	LC50	Teratogenicity study	> 2.5 mg/l air		Rat	Male/female	Experimental value

## sodium octyl sulphate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
Oral	LD50		3200 mg/kg		Rat		Literature study

## sodium decyl sulphate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
Oral	LD50		1950 mg/kg		Rat		Literature study

## D-glucopyranose, oligomers, decyl octyl glycosides

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
Oral	LD50	OECD 423	>2000 mg/kg bw	14 day(s)	Rat	Male/female	Experimental value
Dermal	LD50	OECD 402	>2000 mg/kg bw	14 day(s)	Rabbit	Male/female	Experimental value

## sucrose

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
Oral	LD50		29700 mg/kg		Rat		Literature study

Classification of the mixture is based on the relevant ingredients of the mixture

## Conclusion

Low acute toxicity by the dermal route

Low acute toxicity by the oral route

Low acute toxicity by the inhalation route

## Corrosion/irritation

### ARCTIC 1X3ATC

No (test) data on the mixture available

### 2-(2-butoxyethoxy)ethanol

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination
Eye	Highly irritating	OECD 405		24; 48; 72 hours	Rabbit	Experimental value
Skin	Slightly irritating	OECD 404		24; 48; 72 hours	Rabbit	Experimental value

### ethanediol

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination
Eye	Not irritating	BASF-internal standards		24 hours	Rabbit	Experimental value
Skin	Not irritating	BASF-internal standards		8 days	Rabbit	Experimental value

### sodium octyl sulphate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination
Eye	Serious eye damage					Literature study
Skin	Irritating					Literature study

### sodium decyl sulphate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination
Eye	Serious eye damage					Literature study
Skin	Irritating					Literature study

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# ARCTIC 1X3ATC

## D-glucopyranose, oligomers, decyl octyl glycosides

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination
Eye	Serious eye damage	OECD 405		24; 48; 72 hours	Rabbit	Read-across
Skin	Not irritating	OECD 404	4 h	24; 48; 72 hours	Rabbit	Experimental value

## sucrose

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination
Eye	Not irritating					Literature study
Skin	Not irritating					Literature study

Classification of the mixture is based on the relevant ingredients of the mixture

## Conclusion

Causes serious eye damage.

Not classified as irritating to the skin

## Respiratory or skin sensitisation

### ARCTIC 1X3ATC

No (test) data on the mixture available

## 2-(2-butoxyethoxy)ethanol

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Gender	Value determination
Skin	Not sensitizing	Equivalent to OECD 406		24; 48 hours	Guinea pig	Male/female	Experimental value

## ethanediol

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Gender	Value determination
Skin	Not sensitizing	Guinea pig maximisation test			Guinea pig	Female	Experimental value

## D-glucopyranose, oligomers, decyl octyl glycosides

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Gender	Value determination
Skin	Not sensitizing	OECD 429					Weight of evidence
Skin	Not sensitizing	OECD 406			Guinea pig	Female	Read-across

Classification of the mixture is based on the relevant ingredients of the mixture

## Conclusion

Not classified as sensitizing for skin

## Specific target organ toxicity

### ARCTIC 1X3ATC

No (test) data on the mixture available

## 2-(2-butoxyethoxy)ethanol

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Gender	Value determination
Oral	NOAEL	OECD 408	250 mg/kg bw/day		Overall effects	90 days (continuous)	Rat	Male/female	Experimental value
Dermal	NOAEL	Equivalent to OECD 411	< 200 mg/kg bw/day	Skin	irritation	13 weeks (daily, 5 days/week)	Rat	Male/female	Experimental value
Dermal	NOAEL	Equivalent to OECD 411	> 2000 mg/kg bw/day			13 weeks (daily, 5 days/week)	Rat	Male/female	Experimental value
Inhalation	NOAEL	OECD 413	14 ppm	Lungs		90 day(s)	Rat	Male/female	Experimental value

## ethanediol

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Gender	Value determination
Oral	NOAEL	Equivalent to OECD 407	200 mg/kg bw/day	Liver	No effect	33 day(s)	Rat	Male/female	Experimental value
Dermal	NOAEL	OECD 410	2220 mg/kg bw		Histopathological changes	4 weeks (daily, 5 days/week)	Dog	Male	Experimental value

## D-glucopyranose, oligomers, decyl octyl glycosides

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Gender	Value determination
Oral	NOAEL	EPA OTS 795.2600	100 mg/kg bw/day			90 day(s)	Rat	Male/female	

Classification of the mixture is based on the relevant ingredients of the mixture

## Conclusion

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# ARCTIC 1X3ATC

Low sub-chronic toxicity by the dermal route  
Low sub-chronic toxicity by the oral route  
Low sub-chronic toxicity by inhalation route

## Mutagenicity (in vitro)

### ARCTIC 1X3ATC

No (test)data on the mixture available

#### 2-(2-butoxyethoxy)ethanol

Result	Method	Test substrate	Effect	Value determination
Negative	Equivalent to OECD 471	Bacteria (S.typhimurium)		Experimental value
Negative	Equivalent to OECD 476	Chinese hamster ovary (CHO)		Experimental value
Negative	Equivalent to OECD 473	Chinese hamster ovary (CHO)		Experimental value

#### ethanediol

Result	Method	Test substrate	Effect	Value determination
Negative	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value
Negative	OECD 476	Mouse (lymphoma L5178Y cells)	No effect	Experimental value
Negative	OECD 473	Chinese hamster ovary (CHO)	No effect	Experimental value

#### D-glucopyranose, oligomers, decyl octyl glycosides

Result	Method	Test substrate	Effect	Value determination
Negative with metabolic activation, negative without metabolic activation	OECD 476	Mouse (lymphoma L5178Y cells)		Experimental value

## Mutagenicity (in vivo)

### ARCTIC 1X3ATC

No (test)data on the mixture available

#### 2-(2-butoxyethoxy)ethanol

Result	Method	Exposure time	Test substrate	Gender	Organ	Value determination
Negative	Equivalent to OECD 475		Mouse	Male/female		Experimental value

#### ethanediol

Result	Method	Exposure time	Test substrate	Gender	Organ	Value determination
Negative	Chromosome aberration assay		Rat	Male/female		Experimental value

## Carcinogenicity

### ARCTIC 1X3ATC

No (test)data on the mixture available

#### ethanediol

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination	Organ	Effect
Oral	NOAEL	Not further determined	1000 mg/kg bw/day	24 month(s)	Rat	Male/female	Experimental value		

## Reproductive toxicity

### ARCTIC 1X3ATC

No (test)data on the mixture available



# ARCTIC 1X3ATC

## 2-(2-butoxyethoxy)ethanol

	Parameter	Method	Value	Exposure time	Species	Gender	Effect	Organ	Value determination
Developmental toxicity	NOAEL	Equivalent to OECD 414	633 mg/kg bw/day	0 - 20 days (gestation, daily)	Rat				Experimental value
	NOAEL	Equivalent to OECD 414	>1000 mg/kg bw/day	8-19 days (gestation, daily)	Rabbit				Experimental value
Effects on fertility	NOAEL (P)	NTP continuous breeding protocol	720 mg/kg bw/day	14 week(s)	Mouse	Male/female	Body weight reduction		Read-across
	NOAEL (P)	NTP continuous breeding protocol	720 mg/kg bw/day	14 week(s)	Mouse	Male/female	Mortality		Read-across
	NOAEL (P/F1/F2)	NTP continuous breeding protocol	720 mg/kg bw/day	14 week(s)	Mouse	Male/female			Read-across

## ethanediol

	Parameter	Method	Value	Exposure time	Species	Gender	Effect	Organ	Value determination
Developmental toxicity	NOAEC	Not further determined	150 mg/m <sup>3</sup> air	6 - 15 days (gestation, daily)	Rat		No effect		Experimental value
Effects on fertility	NOAEL	Not further determined	> 1000 mg/kg bw/day		Rat	Male/female	No effect		Experimental value

## D-glucopyranose, oligomers, decyl octyl glycosides

	Parameter	Method	Value	Exposure time	Species	Gender	Effect	Organ	Value determination
Developmental toxicity	NOAEL	OECD 421	1000 mg/kg bw/day		Rat	Male/female			Read-across
Effects on fertility	NOAEL	OECD 414	1000 mg/kg bw/day	20 day(s)	Rat	Female			Read-across

Classification of the mixture is based on the relevant ingredients of the mixture

### Conclusion CMR

Not classified for carcinogenicity

Not classified for mutagenic or genotoxic toxicity

Not classified for reprotoxic or developmental toxicity

### Toxicity other effects

#### ARCTIC 1X3ATC

No (test)data on the mixture available

### Chronic effects from short and long-term exposure

#### ARCTIC 1X3ATC

No effects known.

### 11.1.2 Other information

#### ARCTIC 1X3ATC

No (test)data on the mixture available

#### ethanediol

TLV - Carcinogen	A4
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#### sucrose

TLV - Carcinogen	A4
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## SECTION 12: Ecological information

### 12.1 Toxicity:

#### ARCTIC 1X3ATC

No (test)data on the mixture available

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# ARCTIC 1X3ATC

## 2-(2-butoxyethoxy)ethanol

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	Equivalent to OECD 203	1300 mg/l	96 h	Lepomis macrochirus	Static system	Fresh water	Experimental value
	LC50	Equivalent to OECD 203	2000 mg/l	96 h	Menidia sp.	Static system	Salt water	Experimental value
Acute toxicity invertebrates	EC50	Equivalent to OECD 202	4950 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value
	LC50		13415 mg/l	96 h	Americamysis bahia		Salt water	QSAR
Toxicity algae and other aquatic plants	EC50	OECD 201	>100 mg/l	96 h	Desmodesmus subspicatus	Static system	Fresh water	Experimental value
Toxicity aquatic micro-organisms	EC10	Equivalent to OECD 209	>1995 mg/l	30 minutes	Activated sludge	Static system	Fresh water	Experimental value

## ethanediol

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	EPA 600/4-90/027	72860 mg/l	96 h	Pimephales promelas	Static system	Fresh water	Experimental value
Acute toxicity invertebrates	EC50	OECD 202	> 100 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value
Toxicity algae and other aquatic plants	EC50	EPA 600/9-78-018	6500 - 13000 mg/l	96 h	Pseudokirchneria subcapitata			Experimental value
Long-term toxicity fish	NOEC	EPA 600/4-90/027	15380 mg/l	7 day(s)	Pimephales promelas			Experimental value
Long-term toxicity aquatic invertebrates	NOEC	EPA 600/4-90/027	8590 mg/l	7 day(s)	Ceriodaphnia sp.		Fresh water	Experimental value
Toxicity aquatic micro-organisms	EC20	ISO 8192	> 1995 mg/l	30 minutes	Activated sludge	Static system	Fresh water	Read-across

## D-glucopyranose, oligomers, decyl octyl glycosides

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Toxicity algae and other aquatic plants	ErC50	DIN 38412-9	37 mg/l	72 h	Scenedesmus subspicatus	Static system	Fresh water	Experimental value

Classification of the mixture is based on the relevant ingredients and on application of the summation method

## Conclusion

Not classified for acute aquatic toxicity

## 12.2 Persistence and degradability:

### 2-(2-butoxyethoxy)ethanol

#### Biodegradation water

Method	Value	Duration	Value determination
OECD 301C: Modified MITI Test (I)	>80 %	28 day(s)	Experimental value

#### Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN	3.4 h	1.5x10 <sup>16</sup> /cm <sup>3</sup>	Experimental value

### ethanediol

#### Biodegradation water

Method	Value	Duration	Value determination
OECD 301A: DOC Die-Away Test	90 - 100 %	10 day(s)	Experimental value

#### Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
SRC AOP v1.92	46.3 day(s)	500000	Calculated value

## D-glucopyranose, oligomers, decyl octyl glycosides

#### Biodegradation water

Method	Value	Duration	Value determination
OECD 301E: Modified OECD Screening Test	100 %	28 day(s)	Experimental value

### sucrose

#### Biodegradation water

Method	Value	Duration	Value determination
	61 %	5 day(s)	Literature study

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# ARCTIC 1X3ATC

## Conclusion

Contains persistent organic fluorocomponent(s)

## 12.3 Bioaccumulative potential:

### ARCTIC 1X3ATC

#### Log Kow

Method	Remark	Value	Temperature	Value determination
	No data available			

#### 2-(2-butoxyethoxy)ethanol

##### Log Kow

Method	Remark	Value	Temperature	Value determination
Equivalent to OECD 107		1	Equivalent or similar to OECD 107	Test data

#### ethanediol

##### Log Kow

Method	Remark	Value	Temperature	Value determination
		-1.36		

#### sodium octyl sulphate

##### Log Kow

Method	Remark	Value	Temperature	Value determination
		-0.27		Estimated value

#### sodium decyl sulphate

##### Log Kow

Method	Remark	Value	Temperature	Value determination
		0.71		Estimated value

#### D-glucopyranose, oligomers, decyl octyl glycosides

##### Log Kow

Method	Remark	Value	Temperature	Value determination
EU Method A.8		1.72	EU Method A.8	Conclusion by analogy

#### sucrose

##### Log Kow

Method	Remark	Value	Temperature	Value determination
		-3.70		Experimental value

## Conclusion

No straightforward conclusion can be drawn based upon the available test results

## 12.4 Mobility in soil:

### ARCTIC 1X3ATC

#### ethanediol

##### (log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v1.66	0	Calculated value

##### Volatility (Henry's Law constant H)

Value	Method	Temperature	Remark	Value determination
0.1327 Pa.m <sup>3</sup> /mol	SRC HENRYWIN v3.10	25 °C		Calculated value

#### D-glucopyranose, oligomers, decyl octyl glycosides

##### (log) Koc

Parameter	Method	Value	Value determination
log Koc	OECD 121	1.7	Read-across

#### sucrose

##### Volatility (Henry's Law constant H)

Value	Method	Temperature	Remark	Value determination
4.47E-11 atm m <sup>3</sup> /mol		25 °C		Estimated value

## Conclusion

No straightforward conclusion can be drawn based upon the available test results

## 12.5 Results of PBT and vPvB assessment:

Due to insufficient data no statement can be made whether the component(s) fulfil(s) the criteria of PBT and vPvB according to Annex XIII of Regulation (EC) No 1907/2006.

## 12.6 Other adverse effects:

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# ARCTIC 1X3ATC

## ARCTIC 1X3ATC

### Global warming potential (GWP)

None of the known components is included in the list of substances which may contribute to the greenhouse effect (Regulation (EC) No 842/2006)

### Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No. 1272/2008 and 1005/2009)

#### 2-(2-butoxyethoxy)ethanol

##### Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No. 1272/2008 and 1005/2009)

##### Ground water

Ground water pollutant

#### ethanediol

##### Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No. 1272/2008 and 1005/2009)

##### Ground water

Ground water pollutant

#### sodium octyl sulphate

##### Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No. 1272/2008 and 1005/2009)

#### sodium decyl sulphate

##### Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No. 1272/2008 and 1005/2009)

#### D-glucopyranose, oligomers, decyl octyl glycosides

##### Global warming potential (GWP)

Not included in the list of substances which may contribute to the greenhouse effect (Regulation (EC) No 842/2006)

##### Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No. 1272/2008 and 1005/2009)

#### sucrose

##### Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No. 1272/2008 and 1005/2009)

## SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 13.1 Waste treatment methods:

#### 13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, decision 2000/0532/EC).

07 06 03\* (organic halogenated solvents, washing liquids and mother liquors). Hazardous waste according to Directive 2008/98/EC.

#### 13.1.2 Disposal methods

Recycle/reuse. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Contains a component for which a prohibition exists against discharge into surface water. Contains an organic halogen which may add to the AOX value.

#### 13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).

15 01 10\* (packaging containing residues of or contaminated by dangerous substances).

## SECTION 14: Transport information

### Road (ADR)

#### 14.1 UN number:

Transport	Not subject
-----------	-------------

#### 14.2 UN proper shipping name:

#### 14.3 Transport hazard class(es):

Hazard identification number	
Class	
Classification code	

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# ARCTIC 1X3ATC

## 14.4 Packing group:

Packing group	
Labels	

## 14.5 Environmental hazards:

Environmentally hazardous substance mark	no
--	----

## 14.6 Special precautions for user:

Special provisions	
Limited quantities	

### Rail (RID)

#### 14.1 UN number:

Transport	Not subject
-----------	-------------

#### 14.2 UN proper shipping name:

#### 14.3 Transport hazard class(es):

Hazard identification number	
Class	
Classification code	

## 14.4 Packing group:

Packing group	
Labels	

## 14.5 Environmental hazards:

Environmentally hazardous substance mark	no
--	----

## 14.6 Special precautions for user:

Special provisions	
Limited quantities	

### Inland waterways (ADN)

#### 14.1 UN number:

Transport	Not subject
-----------	-------------

#### 14.2 UN proper shipping name:

#### 14.3 Transport hazard class(es):

Class	
Classification code	

## 14.4 Packing group:

Packing group	
Labels	

## 14.5 Environmental hazards:

Environmentally hazardous substance mark	no
--	----

## 14.6 Special precautions for user:

Special provisions	
Limited quantities	

### Sea (IMDG)

#### 14.1 UN number:

Transport	Not subject
-----------	-------------

#### 14.2 UN proper shipping name:

#### 14.3 Transport hazard class(es):

Class	
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## 14.4 Packing group:

Packing group	
Labels	

## 14.5 Environmental hazards:

Marine pollutant	--
Environmentally hazardous substance mark	no

## 14.6 Special precautions for user:

Special provisions	
Limited quantities	

## 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Annex II of MARPOL 73/78	
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### Air (ICAO-TI/IATA-DGR)

#### 14.1 UN number:

Transport	Not subject
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# ARCTIC 1X3ATC

14.2 UN proper shipping name:

14.3 Transport hazard class(es):

Class	
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14.4 Packing group:

Packing group	
Labels	

14.5 Environmental hazards:

Environmentally hazardous substance mark	no
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14.6 Special precautions for user:

Special provisions	
Passenger and cargo transport: limited quantities: maximum net quantity per packaging	

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

#### European legislation:

European drinking water standards

Maximum concentration in drinking water: 200 mg/l (sodium) (Directive 98/83/EC)

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

2-(2-butoxyethoxy)ethanol ethanediol	Liquid substances or mixtures, which are regarded as dangerous according to the definitions in Council Directive 67/548/EEC and Directive 1999/54/EC.	1. Shall not be used in: — ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any article intended to be used as such, even with ornamental aspects, 2. Articles not complying with paragraph 1 shall not be placed on the market. 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: — can be used as fuel in decorative oil lamps for supply to the general public, and, — present an aspiration hazard and are labelled with R65 or H304, 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN). 5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met: a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life-threatening lung damage"; b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: "Just a sip of grill lighter may lead to life threatening lung damage"; c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010. 6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public. 7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.'
2-(2-butoxyethoxy)ethanol	2-(2-butoxyethoxy)ethanol (DEGBE)	1. Shall not be placed on the market for the first time after 27 June 2010, for supply to the general public, as a constituent of spray paints or spray cleaners in aerosol dispensers in concentrations equal to or greater than 3 % by weight. 2. Spray paints and spray cleaners in aerosol dispensers containing DEGBE and not conforming to paragraph 1 shall not be placed on the market for supply to the general public after 27 December 2010. 3. Without prejudice to other Community legislation concerning the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that paints other than spray paints containing DEGBE in concentrations equal to or greater than 3 % by weight of that are placed on the market for supply to the general public are visibly, legibly and indelibly marked by 27 December 2010 as follows: "Do not use in paint spraying equipment".

### 15.2 Chemical safety assessment:

No chemical safety assessment has been conducted.

## SECTION 16: Other information

Labelling according to Directive 67/548/EEC-1999/45/EC (DSD/DPD)

Labels

Reason for revision: 2; 3

Publication date: 2012-04-04

Date of revision: 2012-10-30

Revision number: 0100

Product number: 51884

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# ARCTIC 1X3ATC



Irritant

## R-phrases

36 Irritating to eyes

## S-phrases

(02) (Keep out of the reach of children)

(46) (If swallowed, seek medical advice immediately and show this container or label)

## Full text of any R-phrases referred to under headings 2 and 3:

R36 Irritating to eyes

R22 Harmful if swallowed

R38 Irritating to skin

R41 Risk of serious damage to eyes

## Full text of any H-statements referred to under headings 2 and 3:

H318 Causes serious eye damage.

H302 Harmful if swallowed.

H319 Causes serious eye irritation.

H315 Causes skin irritation.

H373 Ingestion can cause damage to the kidneys on continuous or repeated exposure.

(\*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

DSD Dangerous Substance Directive

DPD Dangerous Preparation Directive

CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

## Specific concentration limits DSD

ethanediol	C >= 25 %	Xn;R 22
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The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult your BIG licence agreement for details.

**ATTACHMENT L**

**TDD NO. 1/WESTON-042-15-009**

U.S. EPA, Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733

TDD # : 1/WESTON-042-15-009

Amendment # :

Contract # : EP-W-06-042

Vendor : WESTON SOLUTIONS, INC.

TDD Title : Morgan's Point Collision

Verbal Date : 03/09/2015

Purpose : TDD INITIATION

Start Date : 03/09/2015

Completion Date : 06/21/2015

Effective Date : 03/09/2015

Priority : MEDIUM

Overtime Authorized : No

Invoice Unit :

SSID : A6LA

Work Area : Response / Removal

Project/Site Name : Morgan's Point Collision

Work Area Code :

Project Address : 29.6790830 N, 94.9792470 W

Activity : Fund Lead Removal

County : Harris

Activity Code : RV

City : Morgan's Point

Operable Unit :

State : Tx

Emergency Code :

Zip Code : 77571

FPN :

Performance Based : No

**Authorized TDD Ceiling :**

	Amount	LOE (Hours)
Previous Action(s) :	\$0.00	0.00
This Action :	\$20,000.00	0.00
New Total :	\$20,000.00	0.00

**Specific Elements :**

See Schedule

**Description of Work :**

See Schedule

**Region Specific :**

CERCLIS:

Misc 2 :

**Accounting and Appropriation Information:**

**SFO:**

Line	Budget / FY	Approp. Code	Budget Org.	Program Element	Object Class	Site Project	Cost Org.	DCN Line-ID	Funding Category	TDD Amount
1	14	T	6A00	303DC6	2505	06WQRV00	C001	146ARVC018-001	REMOVAL	\$20,000.00



U.S. EPA, Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733

TDD #: 1/WESTON-042-15-009

Amendment #:

Contract #: EP-W-06-042

Vendor: WESTON SOLUTIONS, INC.

<b>Project Officer :</b> Will LaBombard  <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	<b>Branch Mail Code:</b> <b>Phone Number :</b> 214-665-7199 <b>Fax Number :</b>
<b>Contracting Officer Representative :</b> Jhana Enders  <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	<b>Branch Mail Code :</b> <b>Phone Number :</b> 214-665-2270 <b>Fax Number :</b>
<b>Contract Specialist:</b> Michael J. Pheeny  <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	<b>Branch Mail Code :</b> <b>Phone Number :</b> 214-665-2798 <b>Fax Number :</b>
<b>Contracting Officer :</b> Michael J. Pheeny Electronically Signed by Michael J. Pheeny 03/16/2015 <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	<b>Branch Mail Code :</b> <b>Phone Number :</b> 214-665-2798 <b>Fax Number :</b>
<b>Other Agency Official :</b>  <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	<b>Branch Mail Code :</b> <b>Phone Number :</b> <b>Fax Number :</b>

Specific Elements: Analyze -Data that has been collected.,Collect -Samples ,Document -The removal activities. Prepare a written report.,Support -The removal activities,Advise -The OSC on disposal options and completion of the removal activities.

Description of Work: TDD Amount: \$20,000. Tier 1 Response to MTBE in Morgan's Point, Texas. NRC#1110042. The incident is in USCG jurisdiction but EPA is assisting. Assess site conditions, provide air monitoring as needed and/or other technical assistance. Deliverables to include the following; START costs to include personnel/date/hourly rate/hours worked/description of activities performed, air monitoring data in table format with date/time/GPS coordinates/detections/standards. Other deliverables to include draft PolReps, photo/logbook documentation, final report and other as specified by the OSC. Coordinate with OSC Enders at 214.789.9654.